NI 43-101 Technical Report Itafos Conda Project Idaho, USA

for Itafos Conda LLC

Effective Date: July 1, 2023

Authors

Qualified Person	Professional Designation	Company	Title
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Published: February 26, 2024

NOTICE TO READERS: This National Instrument 43-101 Technical Report for ITAFOS was prepared and executed by the Qualified Persons named herein as Authors. This report contains the expressions of professional opinions of the Authors based on (i) information available at the time of publication, (ii) data supplied by ITAFOS, and (iii) the assumptions, conditions, and qualifications set forth in this report. The quality of information, conclusions, and estimates contained herein are consistent with the stated levels of accuracy as well as the circumstances and constraints under which the mandate was performed. This report is intended to be used solely by ITAFOS, subject to the terms and conditions of its contract with WSP USA Inc. This contract permits ITAFOS to file this report as a Technical Report with Canadian securities regulators pursuant to National Instrument NI 43-101 – Standards of Disclosure for Mineral Projects. Except for the purposes legislated under Canadian securities law, any use of this report by any third party is at that party’s sole risk.

Date & Signature Page

This Technical Report on the Itafos Conda Projects is submitted to ITAFOS and is effective as of July 1, 2023.

Qualified Person	Responsible for Parts
Terry Kremmel, P.E. WSP USA Inc. *Signature on file* Date Signed: TBD	Items: 1.6.2, 1.7.2, 12.2, 15-16, 18-19, 21, 22, 25.2, 26.2
Jerry DeWolfe, P.Geo. WSP Canada Inc. *Signature on File* Date Signed: TBD	Items: 1.1-1.4, 1.6.1, 1.7.1, 2-11, 12.1, 14, 23-24, 25.1, 26.1, 27
Mitchell J. Hart, P.E. P-5517, State of Idaho Arcadis *Signature on File* Date Signed: TBD	Items: 1.5, 20
Luc Adjanor, C.Eng. Adjanor and Associates Ltd. *Signature on File* Date Signed: TBD	Items: 1.7.3, 12.3, 13, 17

CERTFICATE OF QUALIFIED PERSON TERRY KREMMEL

I, Terry Kremmel, state that:

(a) I am a Vice President, Mining Engineering at:

WSP USA Inc.

701 Emerson Road, Suite 250

Creve Coeur, Missouri, USA 63141

(b) This certificate applies to the technical report titled NI 43-101 Technical Report on Itafos Conda Mineral Projects, Idaho, USA with an effective date of: July 1, 2023 (the "Technical Report").

(c) I am a "qualified person" for the purposes of National Instrument 43-101 (the "Instrument"). My qualifications as a qualified person are as follows. I graduated from the University of Missouri – Rolla in 1979 with a Bachelor of Science – Mining Engineering. I am a Registered Member of the Society of Mining, Metallurgy & Exploration Inc. (SME) Registration Member Number 1791760, Registered Professional Engineer with the Missouri Board of Architects Professional Engineers and Land Surveyors Registration Number 022340, and a Registered Professional Engineer with the North Carolina Board of Examiners for Engineers and Surveyors Registered Number 030597. I have practiced my profession for 45 years. My relevant experience for the purpose of the Technical Report includes 45 years of direct mining engineering experience including surface mine pit optimizations and designs, mine planning and oversight, mine data interpretation and management, mine cost modelling, and mineral reserve estimation of phosphate, potash, bauxite, coal, lithium, and other stratigraphically controlled deposits.

(d) My most recent personal inspection of each property described in the Technical Report occurred from September 13, 2022 through September 15, 2022.

(e) I am responsible for Item(s) 1.6.2, 1.7.2, 12.2, 15-16, 18-19, 21, 22, 25.2, 26.2 of the Technical Report.

(f) I am independent of the issuer as described in Section 1.5 of the Instrument.

(g) I have not had prior involvement with the property that is the subject of the Technical Report.

(h) I have read National Instrument 43-101. The part of the Technical Report for which I am responsible has been prepared in compliance with this Instrument; and

(i) At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at St. Louis, Missouri, USA this 26th day of February 2024

(signed) "Terry Kremmel"

Terry Kremmel, P.E.

WSP USA Inc.

CERTFICATE OF QUALIFIED PERSON JERRY DEWOLFE

I, Jerry DeWolfe, state that:

(a) I am a Senior Resource Geologist at:

WSP Canada Inc.

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(b) This certificate applies to the technical report titled NI 43-101 Technical Report on Itafos Conda Mineral Projects, Idaho, USA with an effective date of: July 1, 2023 (the “Technical Report”).

(c) I am a “qualified person” for the purposes of National Instrument 43-101 (the “Instrument”). My qualifications as a qualified person are as follows: I am a graduate of Laurentian University, Sudbury, Ontario (M.SC Geology, 2006) and Saint Mary’s University, Halifax, Nova Scotia (B.Sc. with honors in Geology, 2000), and I am a member in good standing of the Association of Professional Engineers and Geoscientists of Alberta (APEGA), the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) and the Association of Professional Geoscientists of Ontario (APGO). My relevant experience after graduation and over 22 years for the purpose of the Technical Report includes exploration, mine geology and resource estimation of phosphate, potash, evaporites, coal, and other stratigraphically controlled deposits.

(d) My most recent personal inspection of each property described in the Technical Report occurred from September 13, 2022 through September 15, 2022.

(e) I am responsible for Item(s) 1.1-1.4, 1.6.1, 1.7.1, 2-11, 12.1, 14, 23-24, 25.1, 26.1, 27 of the Technical Report.

(f) I am independent of the issuer as described in Section 1.5 of the Instrument.

(g) I have been involved with the property that is the subject of the Technical Report since 2019 as an independent Qualified Person for Mineral Resources.

(h) I have read National Instrument 43-101. The part of the Technical Report for which I am responsible has been prepared in compliance with this Instrument; and

(i) At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Calgary, Alberta, Canada this 26th day of February 2024

(signed) “Jerry DeWolfe”

Jerry DeWolfe, P.Geo.

WSP Canada Inc.

CERTFICATE OF QUALIFIED PERSON MITCHELL J. HART, P.E.

I, Mitchell J. Hart, P.E., state that:

(a) I am a Principal Engineer at Arcadis US, Inc. at:

95 East Hooper Avenue

Soda Springs, Idaho 83276

(b) This certificate applies to the technical report titled NI 43-101 Technical Report on Itafos Conda Mineral Projects, Idaho, USA with an effective date of: July 1, 2023 (the “Technical Report”).

(c) I am a “qualified person” for the purposes of National Instrument 43-101 (the “Instrument”). My qualifications as a qualified person are as follows: I am a graduate of the University of Utah with a Bachelor of Science degree in Mining Engineering (1981). I am a licensed/registered professional engineer (PE) with the State of Idaho, License No. P-5517. I am a member of the Society of Mining, Metallurgy, and Exploration (SME), Member No. 01351130. My relevant experience after graduation and over 42 years for the purpose of the Technical Report includes mine: permitting, exploration, development, operations, reclamation and closure as well as historic / legacy mine remediation working for the following companies – Shell Mining, Monsanto, Terra Systems / Mountain Island Energy, Agrium, Great Ecology, GHD and H2H Resources, PLLC, and Arcadis.

(d) My most recent personal inspection of each property described in the Technical Report occurred on August 29, 2023.

(e) I am responsible for Item(s) 1.5 and 20 of the Technical Report.

(f) I am independent of the issuer as described in Section 1.5 of the Instrument.

(g) My prior involvement with the property that is the subject of the Technical Report is as follows: Having worked in the “Phosphate Patch” of southeast Idaho for more than 37 years. I am quite familiar with the majority of past, present, and future phosphate properties, mines, and resources. As a former employee of Agrium, I was involved in the acquisition of Lanes Creek Mine and the early stages of its permitting as well as the early stages of permitting of the Rasmussen Valley, Husky 1, and North Dry Ridge Mines.

(h) I have read National Instrument 43-101. The part of the Technical Report for which I am responsible has been prepared in compliance with this Instrument; and

(i) At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Soda Springs, Idaho, USA this 26th day of February 2024

(signed) “Mitchell J. Hart”

Mitchell J. Hart, P.E.

P-5517, State of Idaho

Arcadis

CERTIFICATE OF QUALIFIED PERSON LUC ADJANOR, QP

I, Luc Adjanor, QP, state that:

(a) I am Director at:
Adjanor and Associates Limited.
Barttelot Court
Barttelot Road
Horsham
West Sussex, RH12 1DQ
United Kingdom

(b) This certificate applies to the technical report titled NI 43-101 Technical Report on Itafos Conda Mineral Projects, Idaho, USA with an effective date of: July 1, 2023 (the "Technical Report").

(c) I am a "qualified person" for the purposes of National Instrument 43-101 (the "Instrument"). My qualifications as a qualified person are as follows. I am a graduate of Ecole Centrale Paris in Chatenay-Malabry, France, with a MSc in Metallurgical Engineering (1996); a Chartered Engineer (CEng), Member of the Institute of Institute of Materials, Minerals and Mining (MIMMM, Member number: 460220) and Qualified for Mineral Reporting (QMR). My relevant experience after graduation and over 20 years for the purpose of the Technical Report in phosphates processing spans over 14 years with various feasibility studies and mineral processing projects in Morocco, Guinea Bissau, Togo, South Africa and the USA. With regards to the Conda Phosphate Operation I have been specifically involved with the operation since 2016 first as a Feasibility Study Project Manager for the mine development projects, as a Process Engineer in charge of the development of a beneficiation project and also as a QP in charge of reporting on all Mineral Properties of the Conda Phosphate Operation, on a continuous basis until 2020.

(d) My most recent personal inspection of each property described in the Technical Report occurred on December 9 and 10, 2022 and was for a duration of two days.

(e) I am responsible for Items 1.7.3, 12.3, 13, and 17 of the Technical Report.

(f) I am independent of the issuer as described in Section 1.5 of the Instrument.

(g) I have had prior involvement with the property that is the subject of the Technical Report.

(h) I have read National Instrument 43-101. The parts of the Technical Report for whom I am responsible have been prepared in compliance with this Instrument; and

(i) At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of the Technical Report for which I am responsible, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at London, United Kingdom this 26th day of February 2024

(signed and sealed) "Luc Adjanor"

Luc Adjanor, QP

Adjanor & Associates Ltd.

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1.0 SUMMARY

This Technical Report (TR) was prepared for Itafos Inc. (Itafos), a vertically integrated phosphate fertilizers and specialty products company headquartered in Houston, Texas (TX) and publicly traded on the TSX Venture Exchange (TSX-V: IFOS). Itafos owns Itafos Conda LLC (Itafos Conda) which includes the Conda Phosphate Plant (CPP) and associated mining operations located near Soda Springs, Idaho (ID). The CPP Produces approximately 550,000 short tons per year (tpy) of monoammonium phosphate (MAP), MAP with micronutrients (MAP +), superphosphoric acid (SPA), merchant grade phosphoric acid (MGA), and specialty products including ammonium polyphosphate (APP). The CPP also includes a wash plant that treats mined phosphate ores delivered by rail to produce the phosphate rock feedstock required by the chemical plant. All ore delivered to the CPP is produced from Itafos' captive mines in southeastern ID, USA.

Itafos engaged WSP USA Inc. (WSP) to compile a National Instrument (NI) 43-101 Technical Report (TR) on its ID mineral projects that are in operation or under development. The mines and projects are owned by its wholly owned subsidiary, Itafos Conda (Conda). Conda operates the Rasmussen Valley Mine (RVM) with the adjacent Lanes Creek Mine (LCM) that is currently in reclamation. Conda is also developing the nearby Husky1 South Maybe Canyon (H1SMC) Project and North Dry Ridge (NDR) Project. Mined phosphate ore is and will continue to be delivered from these mines and projects to rail loadouts and transported via the Union Pacific Railroad (UPRR) to the CPP.

1.1 Property Description and Ownership

1.1.1 Project Description and Location

The Property consists of the four the Conda projects with a total area of 2,850 acres. The projects are located in Caribou County, ID. Itafos' title to the projects includes leases from private, state, and federal surface and mineral owners. Annual surface rental payments are required to maintain the leases and production royalties are paid on ore delivered from each lease to the CPP or rail loadout depending on the terms of each lease. Royalty rates are based on federal regulations. Currently, the federal leases expire in 2035 at RVM, 2036 at H1, and 2043 at NDR. The state lease at NDR expires in 2030. Itafos expects to extend all leases that are needed for production or development in the ordinary course of its business.

Current asset retirement obligations are estimated to be $7.5 Million at LCM, $51.3 Million at RVM, and $3.4 Million at NDR for reclamation of the active mining operations.

The location of known phosphate mineralization at the projects is within the Upper and Lower Zones of the Meade Peak Member of the Phosphoria Formation. Mine workings and all other mine development structures exist at the RVM for annual ore production of roughly 2.3 Million wet short tons of ore. The H1SMC and NDR projects are in the final stages of planning and permitting. The UPRR currently provides service from the Itafos rail loadout at the Wooley Valley Tipple (WV Tipple) located near RVM to the CPP. A new tipple is planned to handle ore from H1SMC and NDR, with continued service provided by UPRR.

Itafos has obtained all permits needed for operations at RVM and is in the process of acquiring all permits required to develop and mine H1SMC and NDR including federal, state, and county permits. In addition to the federal National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) process, Special Use Permit(s) (SUP) may be required from federal, state, and county authorities and may include but not be limited to air permit, stormwater general permit, permit to construct a drinking water system, septic system permit, stream alteration permit, and wetlands (US Army Corps of Engineers [USACE] 404 permit).

1.1.2 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

Access to each of the projects is via local roads connected to state and federal highways. The Conda Projects are located about 15 miles northeast of the town of Soda Springs, ID. Soda Springs is 60 miles east of Pocatello, ID and 175 miles north of Salt Lake City, Utah.

Southeastern ID has a temperate dry continental climate with warm summers and cold winters. Winter temperatures may fall below freezing from November through May, especially in elevations above 6,500 feet. Total snowfall in the region will reach over 100 inches per year. The freezing temperatures generally limit rail operations from RVM to the CPP from about November through April of each year. Except for periodic interruptions during extreme winter weather, the operating season is year-round for the mining and overburden stripping operations. Ore is shipped to and stockpiled at the CPP in the months when the rail line is operating.

Itafos controls sufficient surface rights through its leases and agreements with adjacent property owners to conduct all mining operations at RVM. At H1SMC and NDR, Itafos is finalizing agreements with owners of previously mined adjacent properties to conduct mining activities on those properties and backfill waste into existing pits. Water, power, and labor required to conduct mining operations are available locally. No tailings are generated or stored at the projects. All overburden rock mined is disposed of in permitted storage areas and as backfill into the mined-out pits. No processing is conducted or planned at the projects and no tailings are currently or planned to be stored at any project. All RVM mined ore is loaded at the existing WV Tipple and shipped via an existing UPRR rail line for processing and consumption at the CPP. All tailings storage occurs at the CPP. As currently planned, the H1SMC and NDR projects will also ship mined ore via rail to the CPP for processing and tailings storage.

The topography, elevation, and vegetation at the projects reflect the mountainous terrain that is typical of southeastern ID. The Conda projects are located in the Peale Mountains, which consist of several ranges, ridges, and intermontane valleys. At RVM, elevations typically vary from 6,700 feet above mean seal level (AMSL) to nearly 7,600 feet AMSL at local highs. At H1SMC and NDR, elevations range from 7,700 feet AMSL to nearly 8,900 feet AMSL. The topography changes rapidly from the valley floors to the ridge tops and in steeply incised canyons draining higher elevations. Vegetation is similar at all projects and is primarily sagebrush rangeland at higher elevations with shrubland on ridge flanks and lower elevations. Aspen and mixed aspen conifer forests exist near drainages. Wetlands occur at lower elevations near existing creeks and streams.

1.1.3 History

Conda acquired its leases from Agrium in early 2018. Agrium and a predecessor had produced relatively small quantities of phosphate ore from LCM. RVM was developed by Agrium and Itafos as a greenfield project. Portions of SMC had historical development and production as shown in Figure 4.3. There has been no material historical development or production from the NDR or Husky1 projects.

1.2 Geology and Mineralization

The phosphate mineralization presented in this TR is sedimentary in nature, occurring in a conformable sequence of alternating phosphatic and weakly- to non-phosphatic shale, mudstone, carbonate, and chert beds within the Meade Peak Member of the Permian Phosphoria Formation.

The phosphate mineralization encountered in the Meade Peak Member is stratigraphic in nature and the deposit type is considered a typical example of a marine sedimentary phosphate deposit. The phosphate mineralization occurred during the primary depositional processes and there are no known secondary phases of phosphate mineralization or enrichment identified in the deposits.

The beds of the Meade Peak Member were deposited within a marine sedimentary basin within the Phosphoria Sea that marked the western margin of the North American craton approximately 250 million years ago (Ma). Depositional processes during the period in which the Meade Peak member was being deposited resulted in alternating beds of phosphatic shale and mudstone with layers of non-phosphatic shale, carbonate, and chert beds.

The phosphate mineralization within the Meade Peak Member consists of apatite pellets, oolites, and sand grains, some of which are further cemented together into clusters of pellets and grains in an apatite cement. The apatite within the Meade Peak Member is entirely in the form of carbonate fluorapatite (Altschuler, Z. S. V., 1958).

Individual beds of the Meade Peak Member are laterally continuous over significant distances, with some beds commonly found distributed over tens of thousands of square miles within the Western Phosphate Field (Sheldon 1989). However, the thickness and geometry of the beds has been locally impacted on a deposit scale by both primary depositional variability as well as post-depositional structural modification due to both regional and deposit scale faulting and folding.

1.3 Exploration Status

Exploration programs described in this TR have taken the stratigraphic nature of the mineralization into account and drill hole spacing, sampling methodology, and grade analyses have been designed to evaluate the structural and grade continuity of the targeted phosphatic beds at the deposit scale.

The Conda projects have primarily been drilled using reverse circulation (RC) drilling methods, supplemented in special cases by a small number of core holes drilled for geotechnical, metallurgical, and other purposes. Drilling has been performed by several different independent drilling contractors over the various campaigns on the projects.

RC chips and drill cores were visually logged by Conda geologists for the purpose of collecting downhole lithology, structure, recovery, rock quality designation (RQD), and other geological and physical observations and properties. Wireline geophysical natural gamma logs were performed on most drill holes for the projects.

Visual descriptive logs and gamma logs were used by the Conda geologists to assign beds to the drill hole data for the purpose of identifying sample intervals for grade analyses. Samples from the Conda projects were submitted for grade analysis at the onsite CPP laboratory. Elements analyzed, analytical procedures, and Quality Assurance/Quality Control (QA/QC) measures varied across the exploration campaigns on the individual projects, as well as from project to project.

A summary table of drilling data by project is presented in Table 1.1.

Table 1.1: Summary of Available Drilling Data by Conda Project

Project	Total Drill Holes	Drill Holes with Available Data				
		Collar Surveys	Downhole Surveys	Downhole Lithology Records	Raw Assay Data	Geophysical Wireline Logs
RVM	210	210	0	210	198	210
NDR	292	292	29	290	239	288
H1SMC	370	370	68	370	320	301

Notes: The South Maybe Canyon Mine is a previously mined adjacent property to the H1SMC Project. Wireline log data was not available for the 66 drill holes from the South Maybe Canyon Mine area included in the H1SMC model.

Non-drilling exploration data evaluated as part of the current study on the projects included:

- Conda grade control trench samples and analytical results from RVM and LCM,
- Surface exploration trench samples and analytical results from NDR,
- Downhole wireline geophysical logs performed on the majority of the Conda drill holes,
- Regional and deposit scale geological mapping,
- Light detecting and ranging (LiDAR) survey for NDR and H1SMC.

It is the WSP QP's opinion that the sample preparation, security, and analytical procedures applied by Conda and its predecessors at the Conda projects are reasonable for establishing an analytical database for use in grade modeling and estimation of Mineral Resource estimates as summarized in this TR.

The WSP QP has verified the data provided and reviewed, including collar survey, downhole geological data and observations, wireline gamma logs, sampling, analytical, and other test data underlying the information or opinions presented in this TR. The QP, by way of the data verification process described in Item 12, has used only that data that was deemed by the QP to have been: 1) generated with reasonable industry standard procedures; 2) accurately transcribed from the original sources; and 3) suitable to be used for preparing geological models and Mineral Resource estimates. Data that could not be verified by the QP were not used in the development of the geological models or Mineral Resource estimates presented in this TR.

1.4 Development and Operations Status

1.4.1 RVM and LCM Operations

Itafos currently mines phosphate ore at RVM using open pit mining methods, including mine development, phase development, and production. The mine development phase includes drainage, water control, and primary access. Phase development includes establishing access to the upper benches and removal of topsoil for storage and future reuse. Phase development may only be accomplished during the drier months, so preparation of a new phase is typically done in the year before it is required for production. The mining excavations generally follow steeply dipping phosphate ore beds, which outcrop along the side slopes of valleys. This results in relatively long and narrow ultimate pits which are subdivided into phases along strike of the deposit. Mining is performed using truck and shovel methods with strict controls to place selenium-bearing material back into previously mined pits. Blasting is limited to the harder limestone and chert. Conda utilizes dozers with specially designed "wings" that can be extended from the dozer blade to separate the steeply dipping phosphate bed layers to minimize dilution and maximize recovery. Phosphate ore is trucked to the WV Tipple where it is stockpiled by ore type, blended, and reclaimed via a tipple for train loading. Conda has engaged Kiewit Mining Group (KMG) to perform all mining activities and operation of the WV Tipple.

LCM finished operations in mid-2020 and is currently in reclamation, while RVM is currently the only pit supplying ore to the CPP. The CPP is the exclusive market for the phosphate ores mined and loaded from the Conda Projects and the CPP plans to continue to take and consume all production from its operating mines and mineral projects as raw feedstock for fertilizer production. Although other chemical plants exist in southeastern Idaho, all of the plant owners also own captive phosphate mines. For this reason, there is no open commodities market in southeastern Idaho for phosphate ores from the Itafos mineral projects.

Environmental conditions at the Conda Projects are imposed through the existing mining permits. An industry-wide condition on SE ID mines is to mitigate the impacts of selenium released from overburden. Current best practices are planned and approved at RVM, that includes primarily transporting selenium-bearing overburden into previously mined pits to prevent discharges. Also, the Life of Mine Plan (LOMP) for RVM has identified periods where it will be necessary to temporarily store overburden outside the pit boundary. Non-selenium bearing overburden will be stockpiled in designated storage areas, re-handled, and placed in the final pit void to comply with regulations.

The Conda Projects are vertically integrated cost centers, and state and federal income taxes are not paid directly by, nor allocated to, the operations.

Based on the 2019 PFS and planned production estimates, the expected mine life of RVM is through 2025. Mine reclamation activities will continue after production ceases until final mine closure.

1.4.2 H1SMC and NDR Projects

Future contemplated mining activities include the development of the H1SMC and NDR mineral projects as open pit mines. All tonnage produced from these projects is planned for exclusive supply to the CPP.

This report includes the results of a PFS of the H1SMC and NDR mineral resources and mineral reserves for delivering feedstock to the CPP. The results of the PFS indicate that, assuming all permit requirements and development activities are completed by 2024, full production sufficient to meet the requirements of the CPP may occur by 2024 and continue through 2027 for NDR and 2037 for H1SMC. Investment capital in 2022$ is estimated to be about $94.2 million primarily for facilities and infrastructure development. The imputed average transfer price required to recover all costs of production FOB railcar at the tipple plus a margin sufficient to yield a 7% pre-tax internal rate of return on all production and cover post-production final reclamation and closure costs is estimated to be $287 per ton of P_2O_5 delivered. During full production years, the imputed transfer price per year varies from $225 per ton to $349 per ton depending on production costs. Note that all tons reported in this Technical Report are in short tons unless stated otherwise. The imputed transfer price estimated over the life-of-mine period are within the forecast GMAs from CPP fertilizer sales over the same period; therefore, indicating positive potential economics for CPP supply from the H1SMC and NDR phosphate mineral resources and reserves.

1.5 Environmental Studies, Permitting, and Social or Community Impact

Three of the four Conda Projects – e.g., Rasmussen Valley Mine (RVM), Husky1 / South Maybe Canyon Mine (H1 or H1SMC) and North Dry Ridge Mine (NDR), have been analyzed under the National Environmental Policy Act (NEPA). Lanes Creek Mine (LCM) is located on private land and was analyzed under the Idaho Administrative Procedures Act (IDAPA).

Additionally for the three projects analyzed under NEPA, an Environmental Impact Study (EIS) has been conducted for each by the Bureau of Land Management (BLM), United States Forest Service (USFS) and/or Idaho Department of Lands (IDL) along with the participation of various other federal and state agencies.

For RVM, NDR and H1SMC, a Final EIS (or its equivalent) has been issued. For LVM a Notice to Proceed was delivered following the reclamation bond approval. Subsequent individual Records of Decision (ROD) were issued and Notices to Proceed (NTP) were delivered to secure the necessary other permits and authorizations necessary to commence mine development and mining.

Currently, each project is in various stages of mining and/or reclamation, namely:

- RVM – mining activities are on-going along with concurrent pit backfill and reclamation moves forward.
- LCM – mining activities have concluded, and reclamation activities are on-going.
- H1SMC and NDR – mine development activities have commenced with focus on mining NDR first followed by mining of H1SMC.

Reclamation bonds are required by regulatory agencies as assurance to cover the estimated costs of mine reclamation and closure. Itafos maintains surety bonds for all current bonding requirements associated with mining. The bond amounts are adjusted as the mines are closed and reclamation is completed.

Itafos actively supports and develops partnerships with stakeholder groups (governments, development agencies, non-profit entities, local communities and their citizens) who display their own commitment toward sustainability. The partnerships may be formal agreements or more informal relationships, but in general serve the purpose of maintaining close ties with local stakeholders.

1.6 Mineral Resource and Mineral Reserve Estimates

1.6.1 Mineral Resource Estimate

The Mineral Resource estimates presented in this report were prepared under the supervision of WSP's QP in accordance with the definitions presented in NI 43-101 and Canadian Institute of Mining (CIM) Definition Standards. The estimates were based on geological and grade block models generated from all verified exploration and pre-production drill holes and analytical samples drilled by the Company to date for the properties.

Data verification was performed under the supervision of the WSP QP while exploration data collection was performed under the supervision of Company personnel that also met the standard for QPs under the applicable definitions.

The WSP QP used the verified exploration and sample data to construct a computer-based geological block model of the in-situ phosphate deposit and surrounding rocks and a P_2O_5 grade model for each of the projects. The geological models for the projects were based on a structural interpretation of the deposits based on drilling intervals through the deposits and, in the case of RVM, actual geological exposure in the pits. The grade models consisted of estimated grades within each geological block identified as in situ phosphate. The block model grades were interpolated from sample values of drill hole intercepts.

The Mineral Resources presented in this TR have been estimated by applying a series of physical and geological limits as well as high-level mining and economic constraints; the mining and economic constraints were limited only to a level sufficient to support reasonable prospects for future economic extraction of the estimated resources.

The Mineral Resource categorization applied by WSP has included the consideration of data reliability, spatial distribution, abundance of data, continuity of geology, and grade parameters. WSP performed a statistical and geostatistical analysis for evaluating the confidence of continuity of the geological units and grade parameters. The results of this analysis were applied to developing the Mineral Resource categorization criteria.

The categorized estimated Mineral Resources for RVM, NDR, and H1SMC are presented in Table 1.2. Mineral Resource categorization of Measured, Indicated, and Inferred Mineral Resources presented in Table 1.2 is in accordance with the CIM Definition Standards (CIMDS, 2014). The Effective Date of the Mineral Resource Estimate is July 1, 2023.

Although the Mineral Resources presented in this TR are believed to have a reasonable expectation of being extracted economically, they are not Mineral Reserves. Estimation of Mineral Reserves requires the application of modifying factors and a minimum of a PFS. The modifying factors include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors. To date, except as described in Item 15.0 of this report, studies that provide further insight into prospects for development and extraction of the Mineral Resources have not been completed to a minimum of a PFS.

The reported Mineral Resources for RVM, NDR, and H1SMC in Item 14.0 of this TR are inclusive of Mineral Reserves.

For all projects, the reported Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves.

There is no certainty that all or any part of this Mineral Resource will be converted into Mineral Reserve.

Table 1.2: Summary of Estimated Mineral Resources – Effective Date July 1, 2023

Project	Zone	Resource Classification	Volume (millions; bcf)	Short Tons (millions; wet)	Short Tons (millions; dry)	P_2O_5 (wt.%)	MgO (wt.%)	Fe_2O_3 (wt.%)	Al_2O_3 (wt.%)
RVM	UPZ & LPZ Combined	Measured	79.1	5.9	5.3	25.87	0.88	0.88	2.52
		Indicated	9.7	0.7	0.6	25.89	0.57	0.97	2.68
		Measured + Indicated	**88.8**	**6.6**	**5.9**	**25.87**	**0.84**	**0.89**	**2.53**
		Inferred	0.3	0.02	0.02	26.67	0.36	0.83	2.34
NDR	UPZ & LPZ Combined	Measured	72.1	5.3	4.7	26.74	0.83	1.27	2.61
		Indicated	21.6	1.6	1.4	26.42	0.79	1.26	2.46
		Measured + Indicated	**93.8**	**6.9**	**6.2**	**26.66**	**0.82**	**1.27**	**2.57**
		Inferred	0.7	0.05	0.05	25.87	0.39	1.24	2.47
H1SMC	UPZ & LPZ Combined	Measured	372.9	27.6	24.6	24.29	1.01	0.85	2.27
		Indicated	125.6	9.3	8.3	24.24	1.04	0.83	2.16
		Measured + Indicated	**498.5**	**36.9**	**32.8**	**24.27**	**1.02**	**0.85**	**2.24**
		Inferred	21.6	1.6	1.4	24.67	0.91	0.84	2.14
Totals	UPZ & LPZ Combined	Measured	524.1	38.8	34.6	24.86	0.97	0.91	2.36
		Indicated	157.0	11.6	10.3	24.64	0.98	0.90	2.23
		Measured + Indicated	**681.1**	**50.4**	**44.9**	**24.81**	**0.97**	**0.91**	**2.33**
		Inferred	22.6	1.7	1.5	24.73	0.89	0.86	2.16

Notes:

1. RVM = Rasmussen Valley Mine, NDR = North Dry Ridge Project; H1SMC = Husky1 South Maybe Canyon Project; UPZ = Upper Phosphate Zone; LPZ = Lower Phosphate Zone; bcf = bank cubic feet; wt.% = weight percent.
2. Mineral Resource categorization of Measured, Indicated and Inferred Mineral Resources presented in the summary table is in accordance with the CIM definition standards (CIMDS, 2014).
3. The Mineral Resources presented are reported on both wet and dry in-situ basis. Masses for the Conda projects have been converted from wet to dry basis using a 11% moisture factor.
4. Mineral Resource grades are presented in dry in-situ basis.
5. No recovery, dilution or other similar mining parameters have been applied.
6. Although the Mineral Resources presented in this TR are believed to have a reasonable expectation of being extracted economically, they are not Mineral Reserves. Estimation of Mineral Reserves requires the application of modifying factors and a minimum of a PFS. The modifying factors include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors.
7. For both projects, the reported Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves.
8. There is no certainty that all or any part of this Mineral Resource will be converted into Mineral Reserve.
9. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. All figures are rounded to reflect the relative accuracy of the estimates.
10. The Mineral Resource estimates for the potentially surface mineable resources (NDR and H1SMC) were constrained by conceptual pit shells for the purpose of establishing reasonable prospects of eventual economic extraction based on potential mining, metallurgical and processing grade parameters identified by studies performed to date on the Project.
11. Key constraint inputs included reasonable assumptions for operating costs, CRU fertilizer product forecast prices and a 20% minimum P_2O_5 grade for the Conda projects, based on current CPP specifications for all estimated resources.

1.6.2 Mineral Reserve Estimate

WSP produced a TR for the remaining life of the RVM as well as H1SMC and NDR. The TR included Life of Mine Plans (LOMP) including mine designs, mining sequences, and annual estimates of waste and ore production based on Measured and Indicated Mineral Resource estimates for RVM, H1SMC, and NDR. In determining annual production, the QP applied reasonable Modifying Factors. Any Inferred Resources encountered in the sequencing were treated as overburden material. The mining sequence in RVM is scheduled to be completed by end of 2025. Mining at NDR is scheduled to begin in June of 2024 and continue through 2027. Mining at H1SMC is schedule to begin in 2027 and continue through 2037. An existing stockpile inventory at the Wooley Valley Tipple of 0.58 Mt (wet) was included in the economic analysis and Mineral Reserve estimates. Stockpile inventory varies as Conda typically does not ship ore from November through March. The mining schedule turns over the current stockpile early in the mining schedule but maintains the stockpile in a manner consistent with past practice. For the H1SMC and NDR schedules, the stockpile inventory was used to supplement the ore production from the mine in years of lower ore production to maintain the tonnage necessary to meet fertilizer production requirements.

The annual production estimates were used to determine annual estimates of operating and capital costs. All cost estimates were based on 2022 actual costs (2022$). Total investment capital costs for H1SMC and NDR were estimated as $94.1 M, consisting primarily of infrastructure required for operating the mines. The annual operating cost estimates in the TR also included annual cost estimates of concurrent and post-production or final reclamation costs until projected mine closure. The cost estimates were based on actual Itafos costs and mining contractor rates under an existing mine contracting services agreement with a nationally recognized mining contractor. The QP considers the cost estimates to be to a PFS standard and sufficient for an economic analysis required to support Mineral Reserve estimates for RVM, H1SMC, and NDR.

For the economic analysis, a discounted cash flow (DCF) model was developed for the TR for NDR and H1SMC. The RVM model was not updated for this TR and the QP has relied on the results of the previous economic analysis completed in 2019 for the Conda 2019 TR. The reserves from RVM reported in the Conda 2019 TR were depleted to the effective date of this Report. The QP has verified that no material changes to the costs have occurred that would result in reduction of the RVM mineral reserves reported.

Because RVM, H1SMC, and NDR are captive suppliers to the CPP, and there is no transparent mined phosphate rock commodities price market in southeastern Idaho, WSP estimated mineral reserves for RVM, H1, and NDR based on an imputed transfer price for the LOMP phosphate ore produced and loaded at the Tipple. The annual transfer prices are equal to the estimated cost of production and loading from the mine plus a pre-income tax margin sufficient to return all capital invested, provide a 7% rate of return on all capital invested, and cover all costs of final reclamation after production ceases.

The resulting transfer prices from the NDR and H1SMC DCF model vary during full production years over the TRS period from $225 to $349 per ton of P_2O_5 delivered FOB railcar at the tipple in real 2022$ terms. This imputed transfer price is presented to confirm the minimum economic viability of the mining operations. The imputed transfer price is an estimate and may or may not be indicative of the actual transfer price that the Company expects to achieve, not does it contemplate market prices of downstream fertilizer derived from mined ore and the corresponding impact on future cash flow.

To determine whether the imputed transfer prices from the DCF analysis were economic, WSP estimated the CPP Gross Margins Available (GMA) FOB railcar at the tipple based on forecast MAP and SPA production provided by Itafos, and fertilizer product prices and estimated chemical plant costs stated in an independent 2023 market study commissioned by Itafos. The price forecasts were for MAP and SPA prices at the CPP for the years 2023 through 2037 in real 2022$ terms. WSP estimated the future annual GMAs to pay the imputed transfer price as follows:

Gross Margin Available FOB Railcar at the Tipple (GMA) = (Revenue – CPP Plant Cost – Rail Cost) / P_2O_5 dry tons required by the CPP.

The CPP Plant Cost includes washing costs. Ore washing and rail costs were based on actual costs provided by Itafos. The resulting GMA estimated in real 2022$ terms was $358 ton of P_2O_5 delivered FOB railcar at the tipple for ore from NDR and $345 ton of P_2O_5 delivered FOB railcar at the tipple in H1SMC because of higher mining and beneficiation costs for the H1SMC ore. Because the estimated annual GMAs exceed the annual imputed transfer prices of the H1SMC/NDR ores delivered under the TR, the forecast production plan is economically viable, and therefore, the TR results in the Mineral Reserve estimates shown on Table 1.3.

Table 1.3: Summary of Estimated Mineral Reserves by Mine and Classification – Effective Date July 1, 2023

Property	Reserve Classification	Volume (millions; bcf)	Short Tons (Millions, wet)[a,b]	Short Tons (Millions, dry)[a,b]	P_2O_5 (wt.%)[c]	MgO (wt.%)	Fe_2O_3 (wt.%)	Al_2O_3 (wt.%)
RVM	Proven	62.2	4.6	4.1	26.0	0.82	1.1	3.0
	Probable	2.9	0.2	0.2	26.0	0.82	1.2	3.2
	Proven + Probable	**65.1**	**4.8**	**4.3**	**26.0**	**0.82**	**1.1**	**3.0**
NDR[d]	Proven	56.2	4.2	3.7	26.7	0.82	1.3	2.7
	Probable	10.0	0.7	0.7	26.8	1.05	1.1	2.3
	Proven + Probable	**66.2**	**4.9**	**4.4**	**26.7**	**0.85**	**1.3**	**2.6**
H1SMC[e]	Proven	282.9	20.9	18.6	24.3	0.97	0.9	2.4
	Probable	74.1	5.5	4.9	24.5	0.97	0.9	2.2
	Proven + Probable	**356.9**	**26.4**	**23.5**	**24.3**	**0.97**	**0.9**	**2.3**
Stockpiles[f]	Proven	0.1	1.7	1.5	27.7	0.42	0.64	1.53
Totals	Proven	401.3	31.4	27.9	25.0	0.90	0.9	2.4
	Probable	87.0	6.4	5.7	24.8	0.97	0.9	2.2
	Proven + Probable	**488.3**	**37.8**	**33.7**	**25.0**	**0.91**	**0.9**	**2.4**

Notes:

a. A moisture content of 11% was assumed to convert from wet short tons to dry short tons.
b. A 97% mining recovery and 0% dilution was applied to the tons selected as ore.
c. A P_2O_5 cutoff grade of 20% was assigned as the minimum grade to be considered ore. Grades are reported in dry basis.
d. A pit optimization analysis was performed on the H1SMC deposit, which incorporated the geotechnical parameters, mining costs of $3.06/t wet overburden, $4.61/t wet ore, ore stockpiling and tipple costs of $11.21/t wet. A Gross Margin available per mined P_2O_5 ton (applied at the point of exchange of the tipple) of $357.73/t dry ton recovered P_2O_5 was used to define the limits of the mining pit. The total processing costs are not disclosed in this report but are higher for H1SMC relative to NDR due to an MgO reduction circuit required for H1SMC.
e. A pit optimization analysis was performed on the NDR deposit, which incorporated the geotechnical parameters, mining costs of $3.06/t wet overburden, $4.61/t wet ore, ore stockpiling and tipple costs of $11.21/t wet. A Gross Margin available per mined P_2O_5 ton (applied at the point of exchange of the tipple) of $345.01/t dry ton recovered P_2O_5 was used to define the limits of the mining pits. The total processing costs are not disclosed in this report but are higher for H1SMC relative to NDR due to an MgO reduction circuit required for H1SMC.
f. All stockpiles, which includes WV Tipple and plant stockpiles, total dry tons, and average P_2O_5 grades are displayed.

The Proven and Probable Reserve estimates shown in Table 1.3 result from the conversion of Measured and Indicated Mineral Resources, respectively.

The extent to which the Mineral Reserve estimates could be materially affected by mining, metallurgical, infrastructure, permitting, and other relevant factors that are different than the factors used in the PFS and described in this report is shown by the sensitivity analysis provided in Item 22.6. Because RVM is a producing mine, infrastructure and permitting factors are not anticipated to materially affect the Mineral Reserve estimate.

Except for the CPP GMAs, which are dependent primarily upon fertilizer prices and chemical plant costs, all other relevant mining and metallurgical factors related to RVM, H1, and NDR and described in this report are factors affecting the estimated operating costs summarized in Item 21.0 of this report. If for any reason any of these operating cost factors are changed such that the operating cost estimates change materially, then the Mineral Reserve estimates stated in this report could be materially affected. However, as an example, if the cost factors are changed such that total operating and capital cost estimates are increased by 20%, the imputed transfer price over the project life increases from $287 per ton to $337 per ton of P_2O_5 delivered FOB railcar at the tipple or about 17%. This imputed price remains below the average GMA of $345 per ton for H1SMC and $358 per ton for NDR as described in Item 22.0 and therefore the Mineral Reserve estimates may remain unaffected. As of the effective date, there are no known cost factors that are materially different from the factors used in the TR and summarized in this report to the extent that the Mineral Reserve estimates would be materially affected.

Revenues projected in the TR economic analysis summarized in Item 22.0 depend upon forecast MAP and SPA prices that are used to calculate the GMAs described in this report. If the forecast prices of the CPP phosphate products over the study period decline by 10% or more, then the Mineral Reserve estimates will be materially and adversely affected. In this case, the GMA would be reduced to about $241 and $253 per ton of P_2O_5 delivered FOB railcar at the tipple for H1SMC and NDR, respectively. The extent to which the Mineral Reserve estimates could be affected is estimated to be about a 10% to 16% reduction based upon the pit shell analysis described in this Report.

1.7 QPs Conclusions and Recommendations

1.7.1 Geology and Mineral Resource Estimation Recommendations

Regarding geology and Mineral Resource estimation, recommendations include the following:

- There is a need to increase focus on prioritizing and evaluating additional future potential areas to maintain a mineral resource base beyond the LOM presented in this TR. This may include exploration focused on upgrading known resources, along strike expansion of existing resource areas, or infilling gaps between past mining areas. However, an emphasis should be placed on a significant amount of step out work along trend, or in parallel trends to evaluate new potential areas. Work should be organized into annual programs to allow for sustainable development of future potential resource areas as Conda approaches the end of the current LOMP.
- Evaluate additional drilling needs with consideration towards additional quality control/verification purposes for areas reliant on older vintage drilling such as NDR and SMC.
- Perform additional density and moisture data for NDR and H1SMC to develop more robust project specific density and moisture values for these deposits.
- Upgrade and/or obtain new geological mapping and remote sensing information to get better positional data accuracy on the beds used in the old SMCM area to improve reliability and confidence.
- Conduct a surface geology mapping program to obtain structural geology points that can be incorporated into the geology models for NDR and H1SMC. Emphasis should be placed on attempting to locate modeled faults at surface.
- As part of any future exploration work, it is recommended to perform additional external check assays for Conda projects analytical data performed primarily at CPP.
- As part of any future exploration work continue to perform downhole positional surveys on all drill holes at Conda projects.

1.7.2 Mining

Regarding mining and Mineral Reserve estimation, conclusions and recommendations include the following:

- Develop and perform additional tonnage and ore grade reconciliation studies as mining progresses in RVM and incorporate the results into future mining studies.
- Diligent stockpile management will be critical to the maintaining a sufficient supply of ore to tipple.

- Evaluate the potential for lowering the cutoff grade and increasing reserves.
- Optimize the PFS mine plan schedule for Conda's mid- and short-range planning purposes to levelize mining contractor haul truck requirements and add additional excavator capacity to fleet.
- Perform detailed truck haulage study to potentially create a mixed truck fleet by adding Caterpillar 785 trucks to fleet when truck fleet size expands in H1SMC.
- Optimize haulage routes during short-term mine planning process. Optimization of the haul routes could decrease cycle time and reduce the fleet size.
- The geotechnical characteristics of the deposit are complicated. Probabilistic failure analysis could prove particularly beneficial due to the highly variable nature of the rock.
- In the event that Itafos advances NDR and H1SMC to a Feasibility Level Study, more advanced geotechnical numerical modeling should be considered.

1.7.3 Metallurgy Recommendations

With respect to metallurgy and processing, recommendations include the following:

- Optimization studies of the bench scale test results on NDR ore in order to improve recoveries of the lower size fraction material should be considered. Tests will not be rerun, rather reviewed at different cut-offs, with the intention of helping to set the operating conditions of the Wash Plant Krebs gMax-20 hydrocyclones.
- Improved process control for the future Wash Plant should be considered. For example, this may include moisture determination (using microwaves or infrared) with the weight meters for both the phosphate feed and the washed product, continuously measuring dry Tons. In addition, solids content or density meters of the tailings stream (overflow of the Krebs gMax-20 hydrocyclones) should be considered in conjunction with chemical analysis to determine tailings P2O5 losses. This tailings controls should be complemented with pump flowmeters.
- As detailed engineering work of the future CPP Wash Plant Progresses, it is recommended to pursue bench scale and pilot scale test work on a regular to semi regular basis in order to 1. Improve knowledge of the orebody and performance of the future wash plant as design progresses 2. Establish and prepare CPP lab and other control processes required to monitor the future plant performance.

2.0 INTRODUCTION

Itafos Inc. is a vertically integrated phosphate fertilizers and specialty products company headquartered in Houston, TX, and publicly traded on the TSX-V: IFOS. Itafos owns Itafos Conda LLC (Itafos Conda, Conda) which owns the Conda Phosphate Plant (CPP) located near Soda Springs, ID (Figure 2.1).

The CPP includes a chemical plant that encompasses integrated phosphate fertilizer and industrial product manufacturing operations. The CPP has a production and sales capacity of approximately 550 kt per year of monoammonium phosphate (MAP), MAP with micronutrients (MAP+), superphosphoric acid (SPA), merchant grade phosphoric acid (MGA) and specialty products including ammonium polyphosphate (APP). The CPP also includes a wash plant and ball mill that beneficiates mined phosphate ore delivered by rail to produce phosphate rock feedstock required by the chemical plant.

Conda engaged WSP to compile this NI 43-101 Technical Report (TR) on mineral projects in operation or under development in southeastern ID, USA, and owned by its wholly owned subsidiary, Conda. All phosphate ore mined currently or developed in the future from these projects will be transported to the CPP to be processed into saleable fertilizer products.

Conda operates the Rasmussen Valley Mine (RVM), is developing the nearby Husky1 South Maybe Canyon (H1SMC) and North Dry Ridge (NDR) projects and oversees closure activities at the Lanes Creek Mine (LCM). The projects are active or proposed surface mines that will share substantial infrastructure. Mined phosphate ore is and will continue to be delivered from these mines and projects to rail loadouts and transported via the Union Pacific Railroad (UPRR) to the CPP.

Except where stated differently, this report uses U.S. Customary Units for weights and measures. Currency values are expressed in United States Dollars ($). Cost estimates were obtained using historical 2022 costs from the Conda operations and thus, all prices are in real 2022 dollars.

This TR is prepared in accordance with NI 43-101. The Mineral Resource and Mineral Reserves estimates are stated per the definitions and guidance provided in The CIM Definition Standards on Mineral Resources and Reserves (CIMDS), adopted May 10, 2014.

2.1 Sources of Information

The primary sources of information for this TR are the data and observations collected by Conda (and its predecessors) personnel during various exploration campaigns on the Project properties between 1989 and 2022. In addition to the drilling performed by Conda and its predecessors, historical drilling data performed by third party entities was also used for some of the deposit models, including drilling from the SMC area at the north end of the H1SMC deposit.

Except for the SMC historical drilling referenced above, to the best of WSP’s knowledge, all exploration work that forms the basis of the geological base data used in this Project, were collected under the supervision of Conda senior geologists that, while not independent from Conda, meet the criteria for Qualified Persons (QPs), as defined by NI 43-101.

General regional and local geological interpretation and information for the Project area is sourced from various geological reports on the area prepared by or on behalf of Conda as well as from publicly available peer-reviewed geological papers; these geological reports and papers are referenced throughout this Report, where relied upon.

This TR contains information regarding mineral tenement and land tenure for the Project in the state of Idaho and USA. The WSP QPs are not qualified to verify these matters and have relied upon information provided by Itafos, including lease boundaries, agreements and legal opinions concerning mineral exploration and mineral exploitation rights and surface rights.

All Project-specific data, observations, and reports, including third party consultant technical reports for the Project area, were provided to WSP by Conda.

The sources of information and data contained in the TR or used in its preparation are as follows. Itafos personnel supplied all scientific and technical information and data related to the Conda projects that was used to prepare this report. As described in this report, WSP reviewed and verified the information and data provided, and used the data to produce geological models, resource and reserve estimates, cost estimates, and economic analyses to prepare this report. Itafos also engaged CRU Group to prepare a market study, market price forecasts of fertilizer products from the CPP, and to estimate costs of the chemical plant in 2023 in real 2022$ terms. Applicable citations to specific studies and references are provided in Item 27.0.

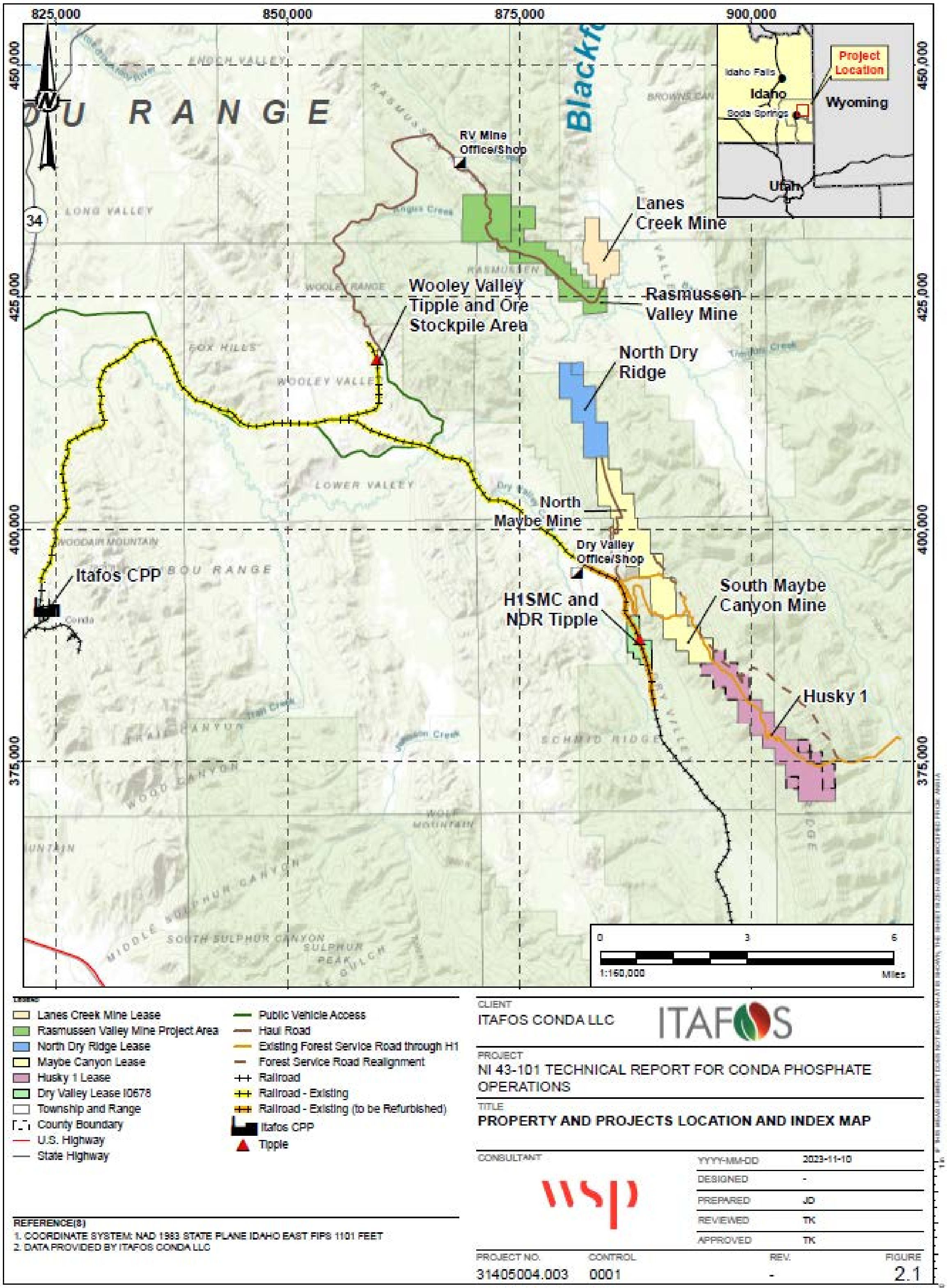


Figure 2.1: Property and Projects Location and Index Map

2.2 Personal Inspection Details

Table 2.1 provides the details of the personal inspection on the property by each QP.

Table 2.1: Site Visit Details

Qualified Person	Date	Locations Inspected	Activities Inspected
Terry Kremmel	9/12/2022 – 9/16/2022	RVM, H1SMC, NDR, Wooley Tipple, Rollover and Stockpile Yard, Dry Valley Shop Area, CPP wash plant and laboratory	Observed drilling, logging & sampling activities. Inspected drill core. Inspected tipple and stockpile operations. Inspected Rollover and stockpile operations. Observed current mining operations and conditions at RVM. Traversed total strike length of future NDR and H1 areas, inspected planned out-of-pit overburden storage facilities areas. Visited planned junction of the NDR/H1/Dry Valley Tipple haul roads. Observed future location of the Dry Valley Tipple. Observed the CPP wash plant operations. Inspected the CPP analytical laboratory. Discussed current mine planning activities and functions with Conda Mine Planning Staff.
Jerry DeWolfe	9/12/2022 – 9/16/2022	H1SMC and NDR Areas	Drilling, logging & sampling for exploration drilling and metallurgical bulk sample programs. Reviewed core storage and logging procedures, CPP analytical laboratory, modeling procedures.
	9/16/2019 – 9/18/2019	H1 and NDR Areas	Drilling, logging & sampling for metallurgical bulk sample program.
	4/15/2019 – 4/18/2019	RVM, LCM, CPP and PH	Itafos Conda Mining operations, core storage and logging procedures, CPP analytical laboratory, modeling procedures. PH visit to office/archives, core storage and proposed mine site.
Luc Adjanor	12/09/2022 - 12/10-2022	Itafos CPP Lab	NDR Bench scale test work installations, bulk sample preparations, test sample run and overall lab conditions
	6/12/2019 - 6/14/2019	Eriez Flotation Division Labs	Husky 1 test work installations, sample preparations, sample bench scale test run, bulk test work equipment checks and overall lab conditions
	2016 - 2022	CPP Wash Plant	Various Visits
Mitchell J. Hart	8/29/2023	Mine Sites	Site Visits – to Wooley Valley Tipple, Rasmussen Valley Mine,Lanes Creek Mine, North Dry Ridge Mine (staging area), Husky 1 / North Dry Ridge Tipple area and Dry Valley Shop and Offices
	4/18/2019	PH	Paris, Idaho visit to office/archives, core shed and proposed mine site.Paris, Idaho visit to office/archives, core shed and proposed mine site.Paris, Idaho visit to office/archives, core shed and proposed mine site.
	3/11/2019	LCM	Drive-by site visit.
		RVM	Site Visit - observed mine operations and trench sampling.

2.3 Acronyms

Table 2.2 contains a list of acronyms used in this Technical Report.

Table 2.2: Acronyms Used in Technical Report

Abbreviation	Description
AIF	Annual Information Form
AMSL	Above Mean Sea Level
AOC	Administrative Order on Consent
APP	Ammonium Polyphosphate
ARO	Asset Retirement Obligation
ASAOC	Administrative Settlement Agreement and Order on Consent
BCF	Brown and Caldwell
BCF	bank cubic feet
BLGC	Bear Lake Grazing Company
BLM	United States Bureau of Land Management
BMPs	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIB	Center Interburden
CIM	Canadian Institute of Mining, Metallurgy, and Petroleum
CIMDS	Canadian Institute of Mining, Metallurgy, and Petroleum Definition Standards
CPO	Conda Phosphate Operations
CPP	Conda Phosphate Plant
CRU	CRU Group or CRU International Ltd.
DCF	Discounted Cash Flow
DEQ	Idaho Department of Environmental Quality
DEM	Digital Elevation Model
DTM	Digital Terrain Model
EA	Environmental Assessment
EDA	Exploratory Data Analysis
EFD	Eriez Flotation Division
EIS	Environmental Impact Statement
EMP	Environmental Monitoring Plans
FOB	Free On Board
FPA	Filtered Phosphoric Acid
GM	Growth Media
GMA	Gross Margin Available
GPM	Gallons per Minute
GSD	Ground Sample Distance
HA	Haley and Aldrich
H1	Husky1
H1SMC	Husky 1 South Maybe Canyon Project
H1SMC	Husky1 South Maybe Canyon
HEA	Habitat Equivalency Analysis
IBLA	Interior Board of Land Appeals
ICP-OES	Inductively Coupled Plasma
ICP-OES	Inductively Coupled Plasma - Optical Emission Spectrometer

Abbreviation	Description
ID	Idaho
IDAPA	Idaho Administrative Procedures Act
IDL	Idaho Department of Lands
KMG	Kiewit Mining Group
KPLA	Known Phosphate Leasing Area
KW	Kilowatt
LCM	Lanes Creek Mine
LEA	Lease Exchange Agreement
LiDAR	Light Detection and Ranging
LPZ	Lower Phosphate Zone
LRMC	Long Run Marginal Cost
MAP	Monoammonium Phosphate
MAP +	MAP with micronutrients
MC	Maybe Canyon
MER	Minor Element Ratio = (Fe_2O_3 % + Al_2O_3 % + MgO %)/P_2O_5 % Used as a predictor of phosphoric acid quality.
MGA	Merchant Grade Phosphoric Acid
MLA	Mineral Leasing Act
MPH	Miles per Hour
MRP	Mining and Reclamation Plan
NI	National Instrument 43-101
NDR	North Dry Ridge
NEPA	National Environmental Policy Act
NGO	Non-governmental organization
NMM	North Maybe Mine
NN	Nearest Neighbor
NOLA	New Orleans, Louisiana
N-SOVB	Non-Selenium Overburden
NTP	Notices to Proceed
OK	Ordinary Kriging
OPOU	Open Pit Operable Unit
OPSOU	Open Pit Sub Operable Unit
OSA	Overburden Storage Area
PA	Pennsylvania
PAP	Phosphoric Acid Plant
PFS	Preliminary Feasibility Study
PH	Paris Hills
PCO	Points of Compliance
PRB	Permeable reactive barriers
PSI	Pounds per Square Inch
QAQC	Quality Assurance / Quality Control
QP	Qualified Person
RC	Reverse Circulation
RCA	Rasmussen Collaborative Alternative
RF	Revenue Factor
RI	Remedial Investigation

Abbreviation	Description
ROD	Record of Decision
RQD	Rock Quality Designation
RMP	Risk Management Plan
ROM	Run-of-Mine
RVM	Rasmussen Valley Mine
SMC	South Maybe Canyon
SMCM	South Maybe Canyon Mine
SOP	Standard of Practice
SOVB	Selenium Overburden
SPA	Superphosphoric Acid
SRM	Standard Reference Material
SRM	South Rasmussen Mine
SUP	Special Use Permit
TPH	Tons per Hour
TR	Technical Report
TSS	Total Suspended Solids
TX	Texas
UAO	Unilateral Administrative Order
UPRR	Union Pacific Railroad
UPZ	Upper Phosphate Zone
USACE	US Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USGS	United States Geological Survey
UT	Utah
WMA	Wildlife Management Area
WSP	WSP USA Inc.
WV	Wooley Valley
XRF	X-ray fluorescence

3.0 RELIANCE ON OTHER EXPERTS

In this Technical Report Summary and as described in this Item, the QPs relied on: a) a report, opinion, statement, of another expert who is not a Qualified Person, or on information provided by the issuer concerning legal, political, environmental, or tax matters relevant to the technical report; or b) a report, opinion, or statement of another expert who is not a Qualified Person concerning the pricing of commodities for which pricing is not publicly available.

3.1 Legal, Political, Environmental, or Tax Matters

Table 3.1 identifies reliance by the Qualified Persons concerning legal, political, environmental, or tax matters relevant to the Technical Report. To the extent of each QP's reliance, the QP disclaims responsibility for the information relied upon.

Table 3.1: Sources of Information

Qualified Person	The Source of the Information Relied Upon	The Extent of Reliance	The Portions of the Technical Report to Which the Disclaimer Applies
Jerry DeWolfe, P.Geo.	Itafos	Total reliance on: a) Legal Matters related to statements on Itafos mineral control, surface rights, and use agreements at all of the projects including associated royalties and costs. b) Political matters regarding statements describing Itafos' relationships with local communities. c) Environmental matters related to statements on permits and compliance, permit requirements, and status of permit applications, bonding, and any agreements with any regulatory agency. d) Tax matters related statements regarding any form of tax cost or lack thereof.	Item 1 - Summary of information relied upon Item 4 - All Parts Item 5 - Sufficiency of surface rights and local resources Item 6 - History of Property ownership changes Item 14 - Assumptions on these matters relevant to mineral resource estimates Item 23 - Adjacent properties Item 25 - Interpretation and conclusions based on information relied upon Item 26 - Recommendations based on information relied upon.
Terry Kremmel, P.E.	Itafos	Total reliance on: a) Legal Matters related to statements on Itafos mineral control, surface rights, and use agreements at all of the projects including associated royalties and costs. b) Political matters regarding statements describing Itafos' relationships with local communities. c) Environmental matters related to statements on permits and compliance, permit requirements, and status of permit applications, bonding, and any agreements with any regulatory agency. d) Tax matters related statements regarding any form of tax cost or lack thereof.	Item 1 - Summary of information relied upon Item 4 - All Parts Item 5 - Sufficiency of surface rights and local resources Item 6 - History of Property ownership changes Item 14 - Assumptions on these matters relevant to mineral resource estimates Item 23 - Adjacent properties Item 25 - Interpretation and conclusions based on information relied upon Item 26 - Recommendations based on information relied upon.

3.2 Fertilizer Markets and Phosphate Rock Pricing

In this Technical Report Summary, QP Jerry DeWolfe and QP Terry Kremmel relied upon a report, opinion, or statement of another expert who is not a Qualified Person concerning the pricing of fertilizer products produced from the CPP. Such pricing is used to determine the economics of the phosphate ore produced, or to be produced, from the mineral projects for which pricing is not publicly available. Prices for phosphate ore or marketable phosphate rock beneficiated from the ore are not publicly available because Itafos is a vertically integrated phosphate fertilizers and specialty products company that uses mined and beneficiated phosphate rock as feedstock for its ultimate saleable fertilizer products. All other phosphate rock produced in the U.S. is used by similar vertically integrated fertilizer and phosphorous producers and, for this reason, there are no publicly available commodity price indices for phosphate ore or phosphate rock sold in the southeastern Idaho region.

Jerry DeWolfe and Terry Kremmel entirely relied upon, and disclaim responsibility for, the fertilizer market analysis, MAP and SPA price forecasts, and product transportation and chemical plant costs described in Item 19.0. The forecasts and estimates in Item 19.0 were relied upon and are material to:

1. The mineral resource estimates in Item 14.0, because the forecast sales prices and chemical plant cost estimates are the basis of potential revenues available for the reasonable prospects of economic extraction of phosphate analysis applied to each mineral project.
2. The economic analysis in Item 22.0 and the mineral reserve estimates in Item 15.0, because the margin between the sales price forecasts and chemical plant cost estimates are relied upon to ensure that adequate funds are projected to be available to mine phosphate ore and load it onto rail cars for transport to the CPP from the mineral projects.
3. The Item 1.0 Summary and Item 25.0 and 26.0 Conclusions and Recommendations from and in reliance upon Items 14.0, 15.0, 19.0, and 22.0.

Itafos retained CRU Consulting, a company that provides market analysis on metals and fertilizers, to prepare a report providing a forecast of phosphate market prices that are key to Conda's market region. The report by a non-QP that is relied upon is the "Conda Phosphate Market Update" dated May 31, 2023 (CRU Re. PL0024-23) by CRU Consulting, which is part of CRU International Ltd. of London, U.K. (CRU 2023).

CRU Consulting is the independent consulting and advisory arm of the CRU Group, an internal business and intelligence firm. Founded in 1969, CRU employs over 290 experts and has more than 11 offices around the world, in Europe, the Americas, China, Asia, and Australia. CRU delivers independent market analysis on a comprehensive range of global commodities across mining, metals, and fertilizers. CRU produces in-depth market analyses and forecasts – where commodities meet economics to provide clients with reliable and authoritative views. CRU's cost services help users gain an understanding of industry cost structures, to rank facilities against each other, investigate investment opportunities, and conduct accurate strategic planning.

It is reasonable for QP Jerry DeWolfe and QP Terry Kremmel to have relied upon the CRU Study and the non-qualified persons who prepared it because CRU, and CRU's consultants and analysts are widely known as experts in commodity price forecasting as well as metals, minerals, and fertilizer industry analyses. CRU's "Fertilizer Week" industry monitor is a widely read industry publication reporting global fertilizer prices assessed weekly across all nutrients and major fertilizer products and supported by analysis and market-moving news.

Significant risks associated with the forecast pricing are discussed in Item 19.0.

QP Jerry DeWolfe and QP Terry Kremmel took the following steps to verify the information provided. The QPs used public research available online to verify current and historical fertilizer prices as well as information provided by Itafos regarding existing production costs and escalation drivers.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Locations and Areas

Through its subsidiary of Conda, Itafos controls mineral rights on ± 12,111.5 acres, principally in Caribou County of Idaho. The Conda mines and projects are located about 15 miles east/northeast of the town of Soda Springs, Idaho (refer to Figure 2.1).

The Property consists of the four active Conda projects with a total area of ± 2,850 acres. The areas and locations of the Conda projects are summarized in Table 4.1. An additional ± 9,272 acres under lease are controlled by Conda as Exploration Targets. Conda owns an additional 6,383 acres within Caribou County. These properties are associated with the CPP, the WV Tipple, and various other properties that have been acquired. There is no phosphate ore associated with these properties.

The 2019 Conda TR included the Paris Hills (PH) Project, located near Bloomington in Bear Lake County, ID, approximately 35 miles from the CPP. In 2021 Itafos made the decision to advance the wind down of the PH project. following the Company's decision to wind down the concession following completion of the 2019 Conda TR, which defined H1/NDR as the Company's path forward for mine life extension at Conda. As a result of this decision, PH is no longer part of Itafos property holdings and Mineral Resources are no longer being reported for PH.

Table 4.1: Location and Acreage: Conda Projects

Project	Area (acres)	Surface Estate Owner	Itafos Control Mechanism	County	Location Township, Range, and Section
LCM	475	Private	Lease	Caribou	T7S R44E Sections 4, 9
					T6S R44E Section 32
RVM	830	Mixed (Federal, State, and Private)	Lease / Own	Caribou	T7S R44E Sections 4, 5, 6, 8, 9
					T6S R44E Sections 31, 32
H1	865	Federal	Lease	Caribou	T8S R45E Sections 30, 31, 32
					T8S R44E Sections 24, 25
NDR	680	Mixed (Federal and State)	Lease	Caribou	T7S R44E Sections 17, 20, 21, 28
Subtotal - Itafos Conda Projects	**2,850**			**Caribou**	**All Locations**
CPP	3,661	Private	Own	Caribou	T7S R42E Sections 32, 33, 34
					T8S R42E Sections 3, 4, 5, 9, 10, 11, 15, 16, 21, 22
					T8S R44E Sections 24, 25
Various	1,091	Private	Own	Caribou	Various
Wooley Valley Tipple	1,631	Private	Own	Caribou	T7S R43E Sections 10, 14, 15, 22, 23, 26, 27
Other Leases	9,272	Mixed (Federal and State)	Lease	Varous	Various

The Property is depicted on Figure 2.1 and individually on Figure 4.1, Figure 4.2, and Figure 4.3. These figures depict the locations of the Property boundaries relative to towns and major highways and access roads, and for each project the mineral lease types, surface ownership, major license/permit boundaries and deposit locations relative to the Property boundaries.

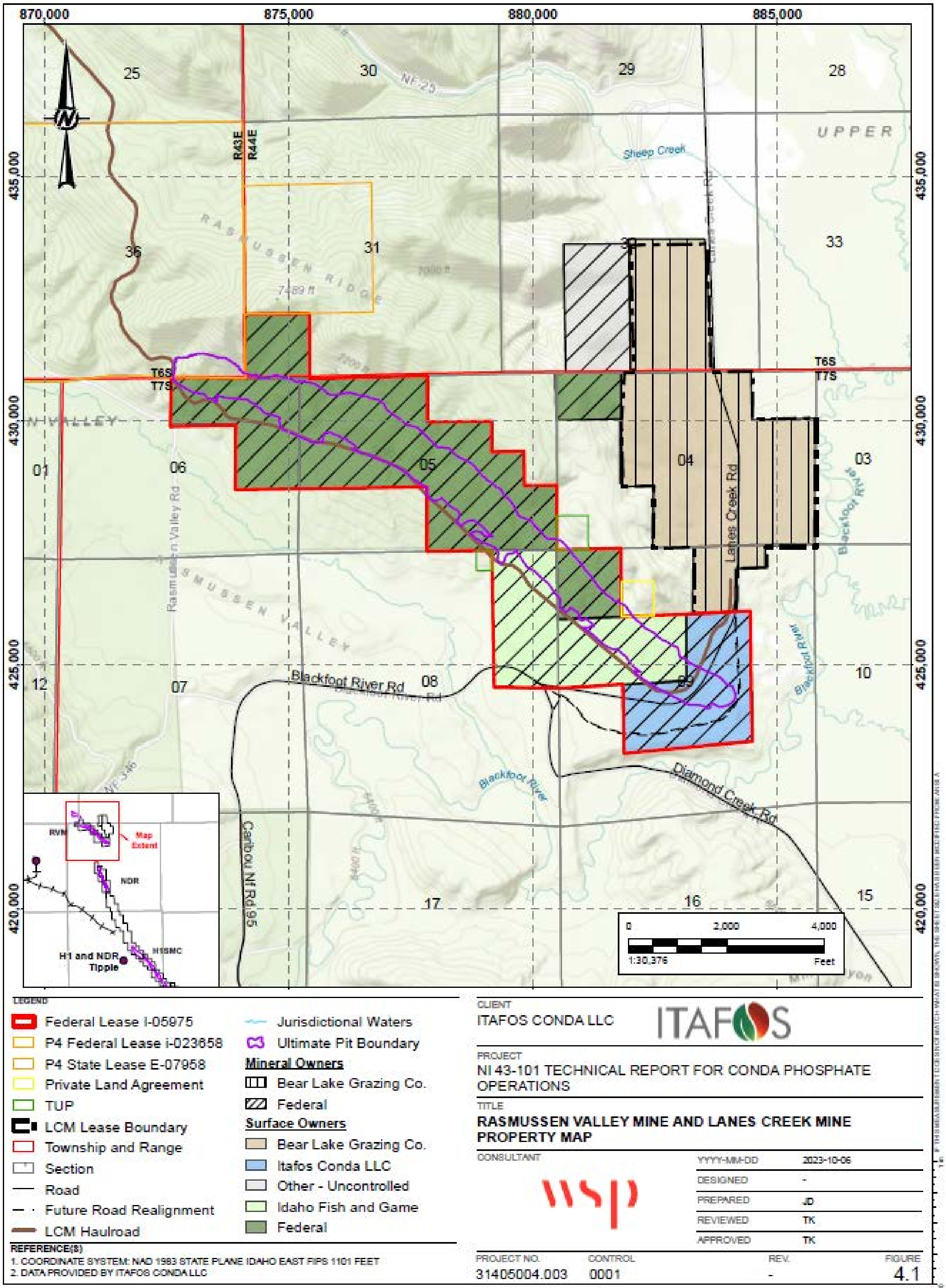


Figure 4.1: Rasmussen Valley Mine and Lanes Creek Mine Property Map

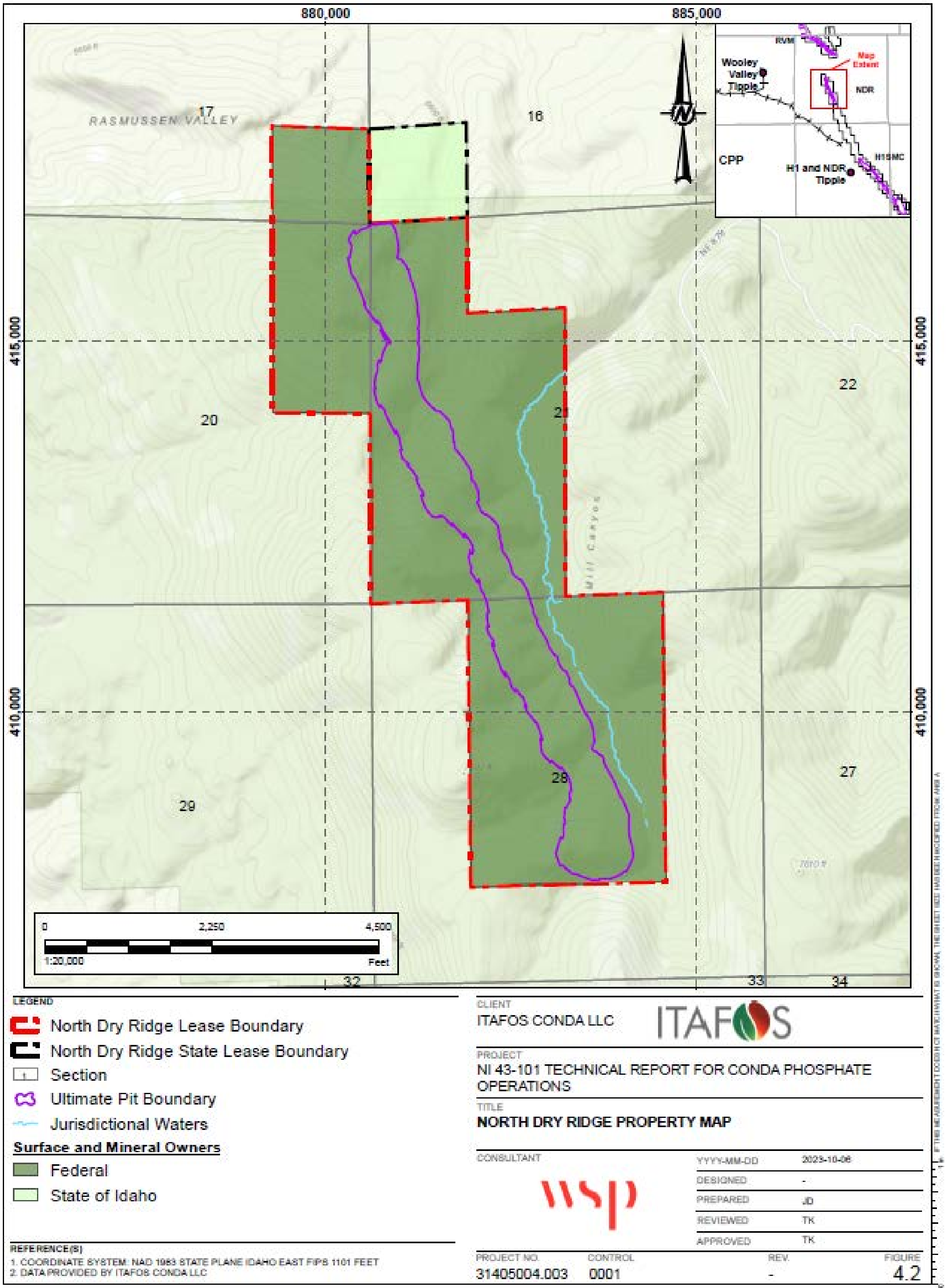


Figure 4.2: North Dry Ridge Property Map

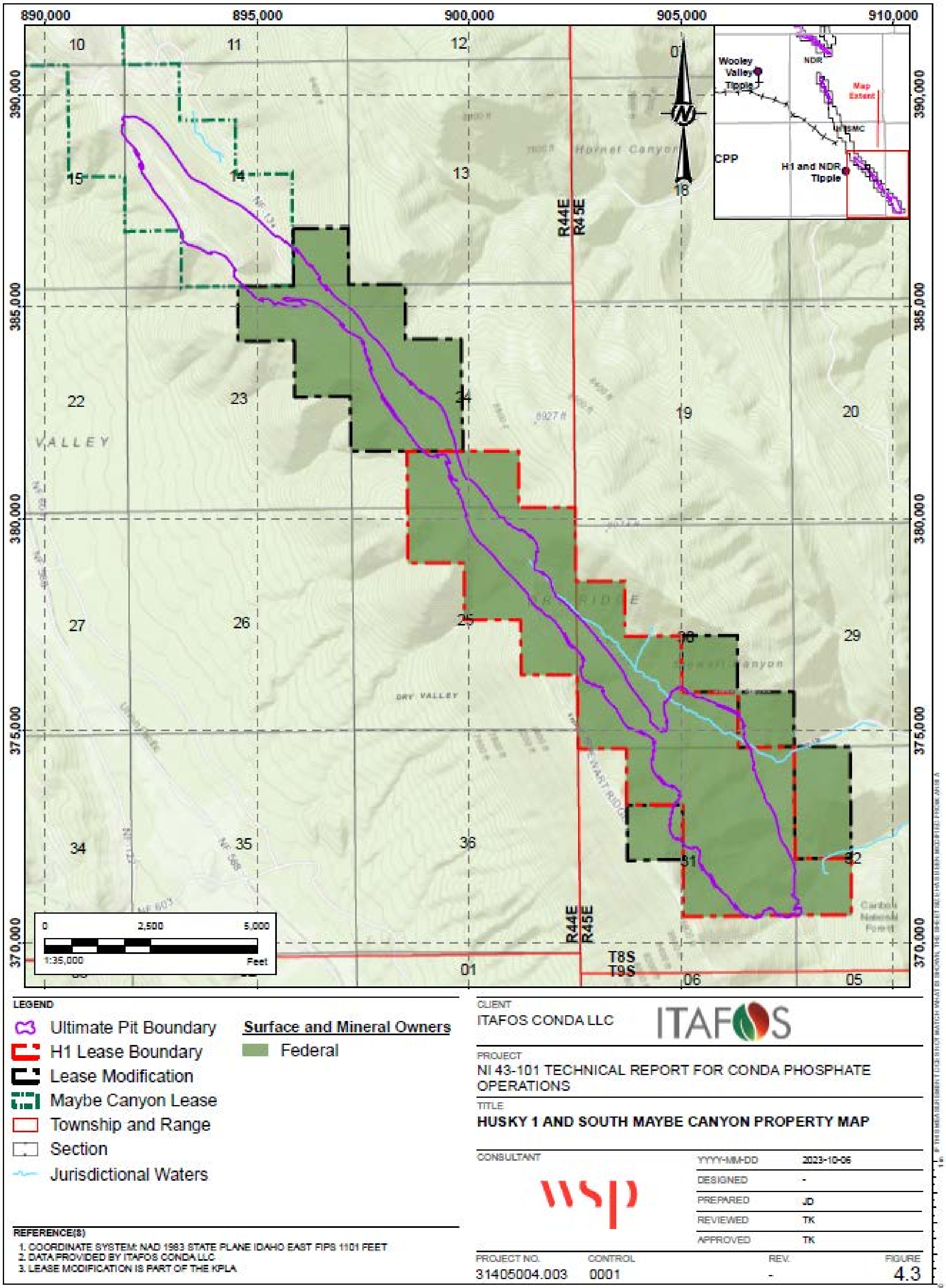


Figure 4.3: Husky1 – South Maybe Canyon Property Map

4.2 Mineral Tenure, Surface, and Other Rights

The Property is controlled solely by Itafos through its 100% subsidiary, Itafos Conda. Conda controls surface and mineral rights on the Property through leases from private landowners and on public lands from the State of Idaho and U.S. Federal government. Table 4.2 shows for each mineral project the type of mineral tenure (private, State, or Federal lease) and the identifying name or number of each; the nature and extent of Itafos' title to, or interest in, the Property including surface rights, legal access, and the expiration date of each lease. As shown, Federal Leases are for indefinite terms; however, the BLM may make reasonable adjustments to the lease conditions once every 20 years.

Table 4.2: Mineral Tenure, Surface, and Other Rights for Conda Projects

Project	Lessor	Lease Number	Lease Rights *	Expiration or Adjustment Dates
LCM	Private	BLG1	S, AM	On completion of all reclamation requirements
RVM	Federal	I-005975	S, AM	Indefinite term, Lease is subject to adjustment in June 2035
H1	Federal	I-5549	S, AM	Indefinite term, Lease is subject to readjustment in June 2036
NDR	Federal	I-8289	S, AM	Indefinite term, Lease is subject to adjustment in October 2043.
	State	E800021	S, AM	Lease is subject to renewal in 2030

As denoted by an asterisk in Table 4.2, the "Lease Rights" codes have the following meanings:

- S: Surface Only, which provide rights to use the surface for access, construction, and operations.
- P: Federal Phosphate Only, federal reservation of phosphate under the Act of 17 July 1914 (38 Stat. 509, as amended by the act of 20 July 1956 (70 Stat. 592) (codified at 30 USC § 121-123).
- AM: All Minerals, which provides the right to extract all minerals, including phosphate with no federal reservation.

4.2.1 Royalties, Encumbrances, Other Obligations, and Licenses

This part describes the obligations that must be met to retain the Property, and to the extent known, the terms of any royalties, back-in rights, payments, or other agreements and encumbrances to which the Property is subject.

The surface and mineral leases held by Itafos require payments specified by regulation or lease to retain the Property. Such payments include surface rentals, advance royalties, and production royalties. The payments under the federal, state, and private leases are summarized as follows.

Federal lands and minerals are held under leases with the BLM. For properties that are not in production, including H1SMC and NDR, advance rental / minimum royalty payments required to hold the leases are $1 and $3 per acre, respectively, each year. In addition, Itafos is required to post a royalty payment bond with the BLM for about $1.43 Million, securing RVM royalty payments, and a statewide lease bond of $25,000 that covers all other Idaho federal leases in Conda's name.

Production royalties due under federal leases are based upon dry tons delivered to the CPP. The P_2O_5 content of the tons delivered is multiplied by the prevailing federal Unit Value, which is currently $1.995, to arrive at a gross ore value subject to the 5% royalty specified in the lease.

State lands and minerals are held under leases with the State of Idaho Department of Lands. For properties that are not in production, advance rental and minimum royalty payments are required to retain the leases are $1 and $3 per acre, respectively, each year.

State production royalties use the same payment formula as the federal production royalty, but payments are based on dry tons of ore delivered to the rail loadout.

Private land and minerals are held under lease with a large ranching entity.

4.3 Environmental Liabilities

To the extent know, current environmental liabilities to which the Property is subject are summarized by Project on Table 4.3.

Table 4.3: Current Environmental Liabilities by Project

Project	Source of Liability	Type of Liability	Current Liability Amount (US$)
LCM	Areas affected by historical mining	Reclamation and Closure	$9.12M Reclamation bond amount
RVM	Areas affected by current mining	Reclamation and Closure	$54.0M Reclamation bond amount
H1SMC	Areas affected by mine development	Reclamation	$18K Reclamation Bond Amount
NDR	Areas affected by mine development	Reclamation	$3.37M Reclamation Bond amount

Additional information is also provided in Item 20.0. related to environmental studies and the asset retirement obligations (ARO) estimate for future mine closure costs related to each project on the Property.

In 2018, Itafos acquired the CPP from Agrium. Agrium and Potash Corporation merged to form Nutrien Ltd. As part of these transactions, Nutrien retained past historical and legacy liabilities at CPP and is subject to an Administrative Order on Consent (AOC) (Docket No. RCRA-10-2009-0186), which was entered with the United States Environmental Protection Agency (USEPA) in 2009. Additional information on the CPP and the AOC are provided in Item 20.0.

4.4 Permits

LCM is permitted under the State of Idaho laws and regulations. RVM, H1SMC, and NDR are permitted under State and Federal Regulations by the IDL and BLM under the authority of the IDAPA, Mineral Leasing Act (MLA) and National Environmental Policy Act (NEPA), which required an Environmental Impact Statement (EIS) resulting in a Record of Decision (ROD) from the BLM. In addition, Special Use Permit(s) (SUP) may be required as part of the Federal permitting process. These permits could include, but not be limited to, land use for haul road and staging area, sedimentation basins, stockpile locations, surface water runoff areas, and interceptor ditches. Supplemental permits may include but not be limited to air permit, stormwater general permit, permit to construct a drinking water system, septic system permit, stream alteration permit, and wetlands (404 Permit) permit.

To the extent known, Table 4.4 shows the permits that must be acquired to conduct the work proposed for each Project, and the permits that have been obtained to the Effective Date of this TR.

Table 4.4: Permits Acquired and to be Acquired for Itafos Mines and Projects

Project	Work Proposed	Permits Acquired or Required	Current Status
LCM	Closure	(Mine and) Reclamation plan Amendment (S00509) Final Order (Signed Approval) Point of Compliance Determination Point of Compliance Modification Point of Compliace -- Baseline and Background Concentration of Constituents Storm Water Pollution Prevention Plan (SWPPP) United States Army Corp of Engineers (USACE) - 404 Permit Idaho DEQ - 401 Certification Consultation with NOAA Fisheries Stream Alteration Permit Conditional Use Permit to Construct Modification of existing permits and approved Mine and Reclamation plans to backfill final phases of LCM with RVM overburden	Acquired
RVM	Production	Notice to Proceed Lease Modification Approval Conditional Use Permit Point of Compliance Determination Baseline and Background Concentration of Constituents Storm Water Pollution Prevention Plan (SWPPP) EIS and ROD Conditional Use Permit to Construct Spill Prevention Control and Countermeasure (SPCC) Plan Environmental Monitoring Plan Modification of existing permits and approved Mine and Reclamation plans to backfill final phases of LCM with RVM overburden	Acquired
H1SMC	Development	BLM: EIS ROD, Notice to Proceed USFS: ROD and Special Use Permit(s) IDEQ: SWPPP and Points of Compliance (POC)	Acquired
		USACE: 404 Permit and Stream Alteration Permit BLM: Lease Modification Approvals IDL: Mine Reclamation Approval IDEQ: 401 Permit USFS: Special Use Permit Modifications	Required
NDR	Development	BLM: EIS ROD, Notice to Proceed USFS: ROD and Special Use Permit IDEQ: SWPPP, and Points of Compliance IDL: Mine Reclamation Approval	Acquired
		BLM: Lease Modification Approvals USFS: Special Use Permit Modifications	Required

4.5 Significant Factors or Risks Affecting Access, Title, Right, or Ability to Work on the Property

There are no known significant factors or risks that may affect access or title to any of the mineral Projects described in this PFS.

To the extent known, the following significant factors and risks may affect Itafos's right or ability to perform work on the Conda projects.

LCM is in reclamation and RVM is a production-stage project. H1SMC and NDR are in the development stage and will be scheduled to supplement RVM ore as the deposit is exhausted.

Significant factors and risks that may affect the right or ability to perform work at RVM, H1SMC, and NDR are operational in nature and include primarily diligence in mine operations to maintain production; that is, assuring safety in design, engineering, operations, prudent management of air quality, water management (stormwater, Clean Water Act, NPDES/IPDES, etc.), environmental monitoring, pit backfilling, and concurrent reclamation.

The right and ability to work at other projects on the Property may depend on prudent and effective post-mining work at LCM and RVM including environmental monitoring, maintenance (surface and ground water monitoring, Point of Compliance requirements, and so forth), and achieving reclamation goals and objectives.

The H1SMC and NDR site environmental impacts were evaluated through the NEPA process and received the record of decision. Any further mine plans or modifications are contingent on approval based on a Determination of NEPA Adequacy (DNA). It will also be contingent on successful execution of agreements with Nutrien. The specific activities needed for a safe, environmentally sound, and efficient operation are described below. Itafos expects that these proposed activities are of moderate risk and very similar to the risk that operators in the area have experienced in the recent past, including Itafos' predecessors. Notable for the activities described below is that the agency preferred best management practices (BMPs) are to maximize orebody development and to backfill historical pits to the extent practical.

The NEPA process may be complicated by non-governmental organizations (NGOs) use of US federal courts to oppose and litigate against any ROD issued by a US government agency or department. This process of litigation in the US federal courts may cause substantial delays in obtaining the necessary permits and authorizations. These delays are often measured in years and can add substantial legal and project holding costs to the project. Over the past 20 years three RODs issued by the BLM Pocatello Field Office concerning phosphate projects have been litigated by NGOs. Until recently, the government prevailed in each case, such that the ROD was upheld, and the projects were allowed to proceed. However, in 2023, a US District Court judge for the District of Idaho sided with the NGO's and ruled against P4/Bayer AG for their Caldwell Canyon mine application and vacated the ROD.

An unleased "Known Phosphate Leasing Area" (KPLA) lies just north and adjacent to the H1 Lease. Itafos intends to combine this KPLA into the H1 lease through the general permitting and lease modification process. The extent of phosphate mineralization in the KPLA was demonstrated in the approved MRP (proposed action) and was carried through the FEIS with the BLM recommendation on the ROD to include that area in the H1 lease modification. The lease modification process is currently underway.

Within the KPLA's proposed mining area exists a buried pipeline currently in use by a separate company. An Agreement is in place that the pipeline will be relocated at the owner's expense (engineering, permitting, and construction) at the request of Itafos based on the approved MRP. Itafos has every intention to communicate and cooperate with the owner relocation of the pipeline for a timely and cost-effective. Permitting was already completed during the H1NDR ROD.

Within the KPLA and the H1 lease exists a USFS road currently accessed by the general public. Itafos will propose various alternatives to the USFS for consideration of road relocation to protect the public from mining activities. An agreement with the USFS is considered low risk to the permitting process since numerous alternatives exist. The NDR lease and proposed operation is partially overlapping and adjacent to an Idaho Department of Fish and Game Wildlife Management Area (WMA). Although the lease extends into the WMA, Itafos is proposing to not extract phosphate rock from that portion of the lease. The current RV mine operation is partially overlapping the same WMA; similar operational methods, and monitoring are assumed for NDR.

As part of the MRP and general permitting process, Itafos is proposing to utilize the Maybe Canyon (MC) lease (held by Nutrien) which is located directly between the proposed KPLA/H1 and NDR pit areas. The MC lease contains the historical North and South Maybe Canyon mines (mining operations completed in 1993) where access roads and partially backfilled open pits still exist. Itafos is proposing to bifurcate the MC lease and acquire the parts of the MC lease that cover the North Maybe Mine (NMM) pit and South Maybe Canyon Mine (SMCM) mining features. The intention is to extract the economical phosphate ore left behind within the southern extension and backfill the pits (to the extent practical) with overburden mined from the KPLA/H1 pit. Similarly, Itafos is proposing to access the NDR pit area by utilizing an existing private road owned by Nutrien and access roads developed through the NMM. Backfilling the NMM pit with overburden from the NDR pit (to the extent practical) was also proposed, analyzed through NEPA, and listed for approval in the ROD.

Phosphate ore will be hauled from the H1SMC and NDR pits to an ore stockpile and rail loadout facility (tipple) area. The tipple location is west of the H1 lease in the foothills of Dry Valley on a BLM leased area. Ore will be loaded on a train and transported via existing rail (refurbishment will be required for a portion of the track) to the CPP. No additional permitting risk is assumed beyond what has been described.

The NMM and the SMCM recently underwent investigation and remediation of impacts from selenium through Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) under an Administrative Settlement Agreement and Order on Consent (ASAOC) between the subsidiaries of Nutrien and several Federal Agencies (USFS is the lead agency). These sites are immediately adjacent to the H1SMC and NDR sites. The proposed plan for remediation recommends no further action, and this plan has completed the public comment period, and the draft ROD is now under review by the relevant agencies. Itafos is proposing to access H1SMC and NDR through the Maybe lease, extract the remaining economic phosphate rock from the SMCM and backfill (as much as practical) the open pits at both NMM and SMCM. Itafos considers the risk of timely permit approval and any liability of comingling backfill material are similar to the risk operators (including Itafos) in the area have experienced concerning other historical pit backfill operations. Notable is that the agency preferred BMPs are to maximize the extraction of the phosphate resource and to backfill historical open pits as much as practical. Proposed backfill methods will follow the currently approved methods at the on-going Itafos operations where overburden is selectively placed into the historic or proposed open pits. Current practices of backfilling overburden within the pit(s) are different from historical practices of permanently stockpiling overburden external to the pit(s). A significant portion of the current CERCLA activities at the NMM and SMCM has been focused on overburden placed external to the pits.

The H1SMC and NDR leases are in proximity to other federal leases containing historical mine sites that are in various stages of ongoing assessment, investigation, and remediation under CERCLA of selenium impacts from these sites. These include Nutrien's Champ Mine (completed in 1986) and Nutrien's Mountain Fuel Mine (completed in 1993). The Champ historical mine is approximately 1.5 miles west of the H1SMC and NDR leases. The Mountain Fuel historic mine is approximately 3.5 miles southwest of H1SMC. None of these properties are expected to impact future operations at H1SMC and NDR.

5.0 ACCESIBILITY, CLIMATE, LOCAL RESOURCES INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 Topography, Elevation, and Vegetation

The Conda projects are situated in Caribou County, Idaho, (Figure 5.1). Topography, elevation, and vegetation are similar for each project. As shown in Figure 5.2, RVM is located on the southwestern flank of northwest-southeast trending Rasmussen Ridge. Rasmussen Ridge is directly south of the Grays Range and bounded by Rasmussen Valley to the south and Sheep Creek to the north. The local topography rises from 6,500 feet AMSL at the floor of Rasmussen Valley to a local peak of nearly 7,500 feet AMSL.

LCM is immediately to the east of RVM on the southeastern tip of Rasmussen Ridge and bounded to the east by Upper Valley. Local topography rises along the ridge from about 6,480 feet AMSL at the valley floor to a local peak of 6,870 feet AMSL (Figure 5.2).

NDR is located about two miles south of RVM on the tip of the northwest-southeast trending Dry Ridge. As shown on Figure 5.3, NDR is on the northeast side of the tip and bounded to the north by the southern tip of Rasmussen Valley, to the east by Mills Canyon, and to the west by the western flank of Dry Ridge. From the ridgetop, the topography descends to the west to the floor of Dry Valley. Topography at NDR varies along the flank of the ridge from 6,700 feet AMSL in drainages to 7,600 feet AMSL at the ridgetop.

H1SMC is located about six miles southeast of NDR at the southern end of Dry Ridge and extending southeast along the flank of Stewart Ridge, see Figure 5.4. H1SMC is intersected by several drainages causing the topography to vary along the strike of the proposed mine. Local topography is relatively steep and varies from ridgetop elevations of nearly 8,900 feet AMSL to elevation in local drainages of about 7,700 feet. The northern part of H1SMC is on the western flank of Dry Ridge, which descends to the Dry Valley floor about two miles to the southeast. Stewart Canyon Bisects H1SMC.

Vegetation in the project areas typically consists of aspen or mixed aspen-conifer forest and high elevation rangelands on higher ridge elevations with big sagebrush shrubland dominating ridge flanks. Silver sagebrush shrublands cover lower elevations and non-wetland valley floors. Wetlands occur at lower elevations near existing creeks and streams on valley floors.

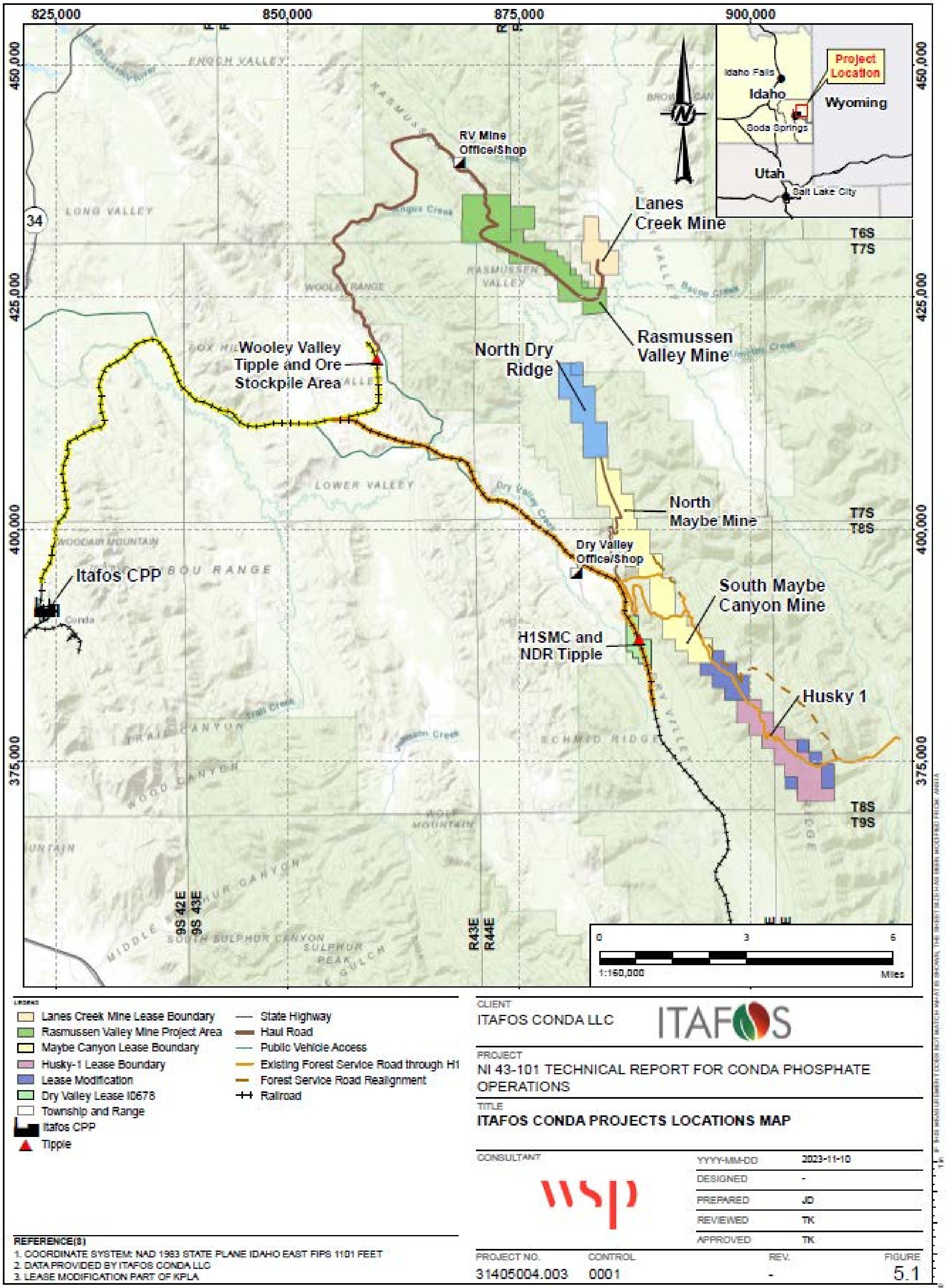


Figure 5.1: Conda Projects Locations Map

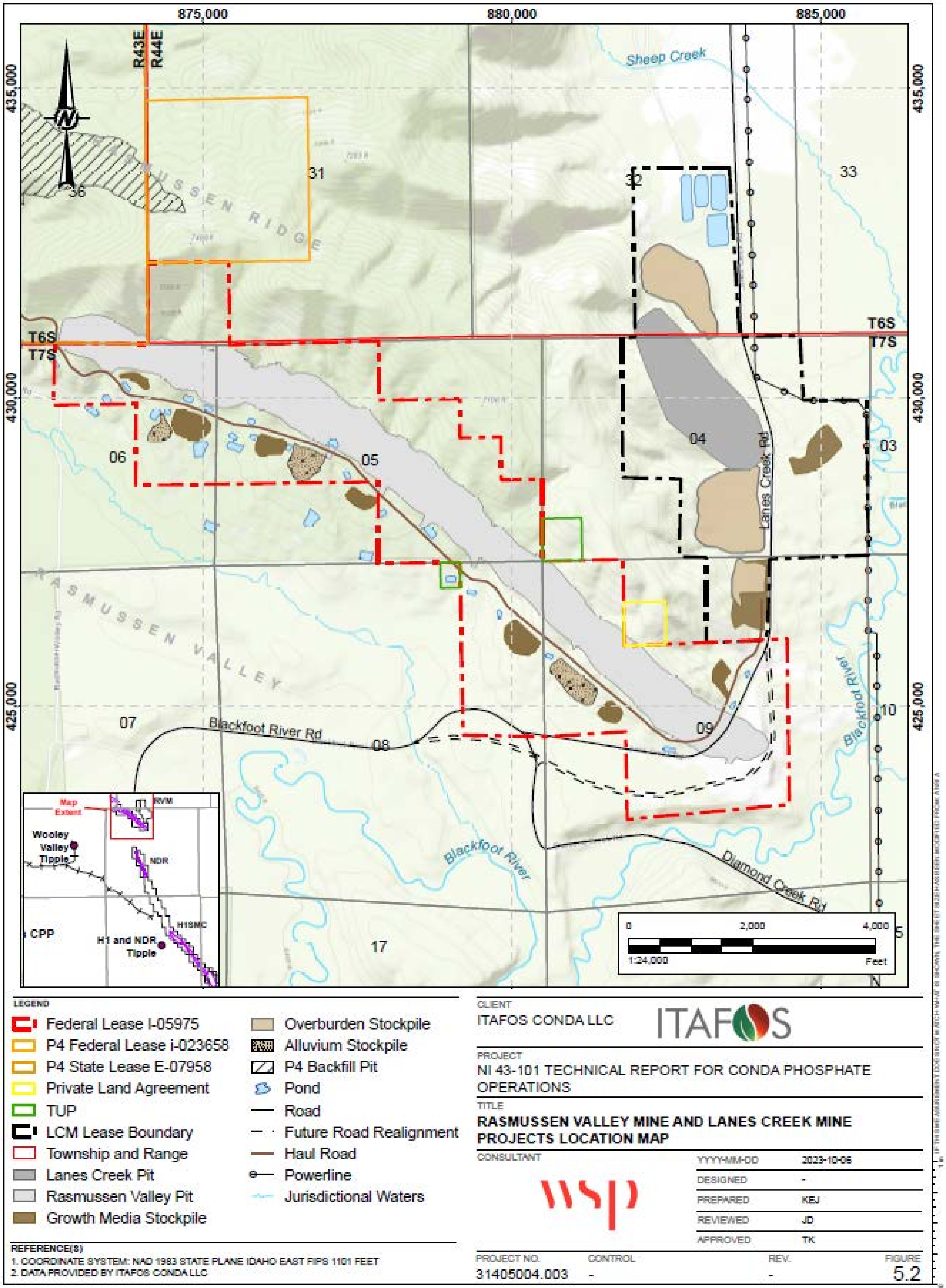


Figure 5.2: RVM and LCM Location Map

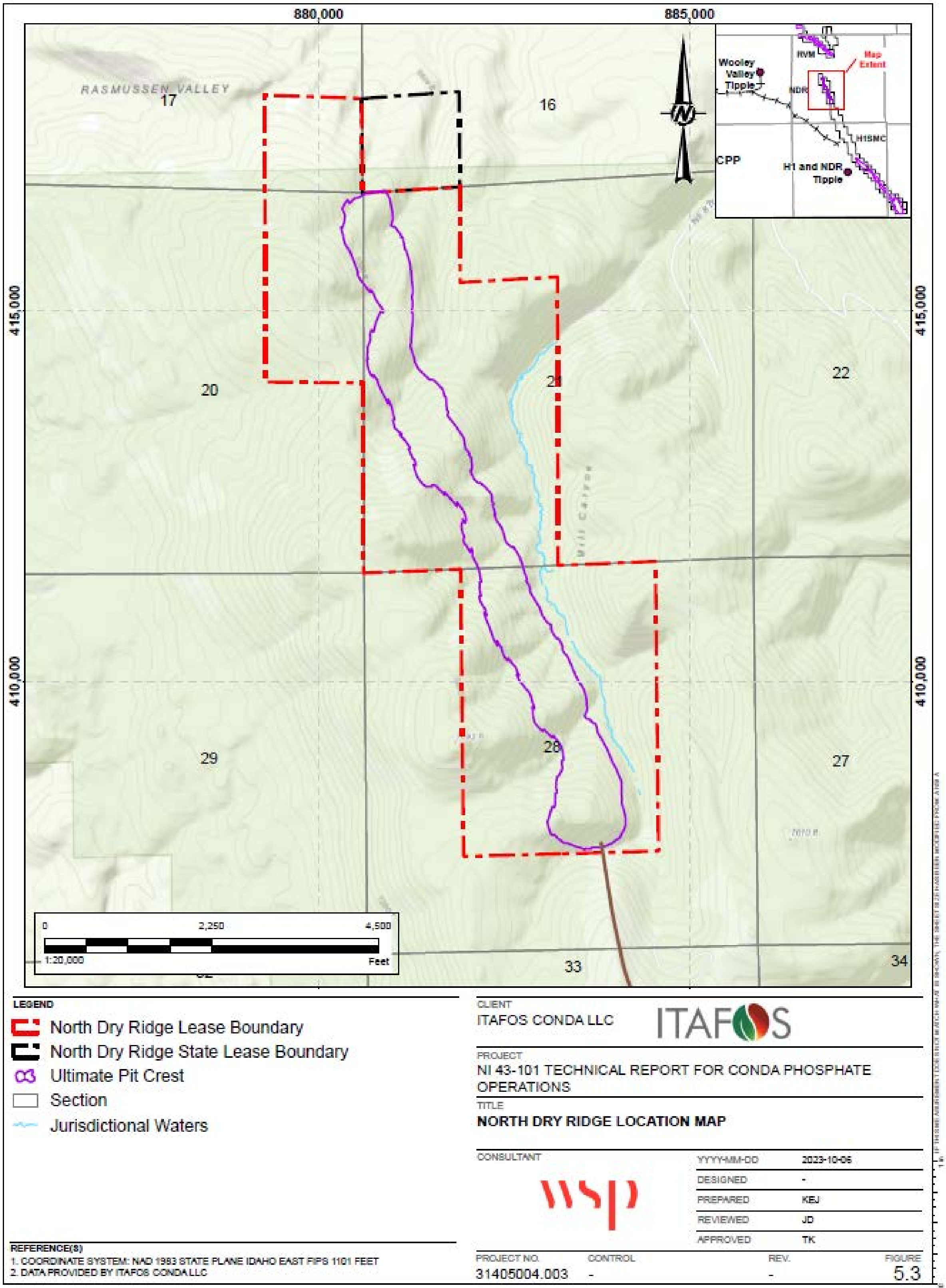


Figure 5.3: NDR Location Map

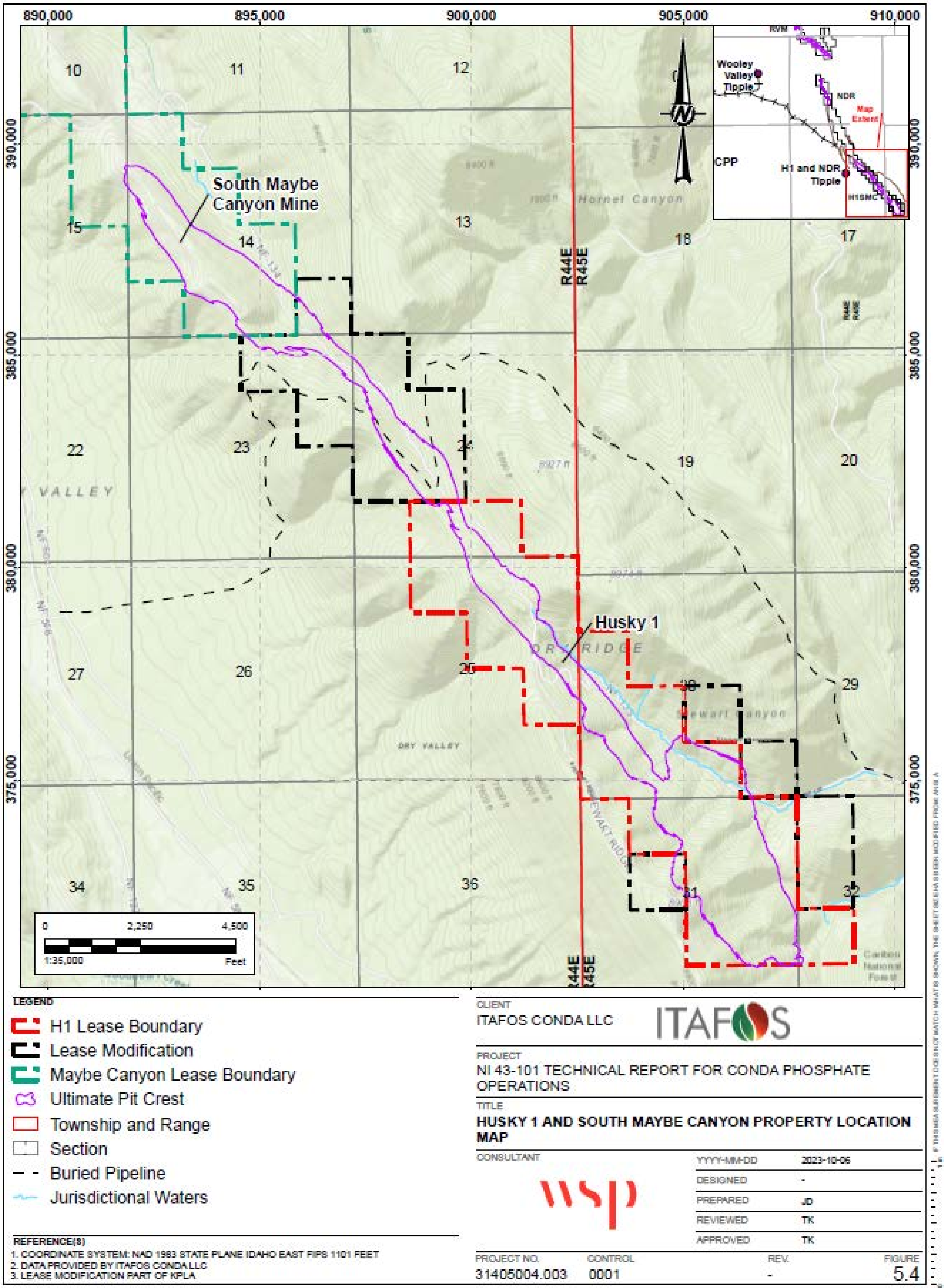


Figure 5.4: H1SMC Location Map

5.2 Accessibility

Out of state personnel or visitors to the Itafos mines and projects typically arrive by air using the Salt Lake City International airport or regional airports at Pocatello and Idaho Falls, ID. Ground transportation to Soda Springs is via Interstate Highway 15 and US Highway 30.

Soda Springs is the closest town to the CPP and Conda mines and projects and is located at the intersection of Highway 30 and Highway 34. Soda Springs is about 60 miles east of Pocatello, ID; 105 miles south of Idaho Falls, ID; and 175 miles north of Salt Lake City, UT with each location serviceable by a commercial airport with daily flights. The CPP is accessible from State Highway 34 north of Soda Springs and then east on Conda Road to the facility.

Primary access roads to each mine from US Highway 34 are:

- East on Blackfoot River Road, and on Rasmussen Valley Road to RVM
- East on Blackfoot River Road, through the Blackfoot Narrows, and north on Lanes Creek Road to LCM.
- East on Blackfoot River Road, on to Slug Creek Road, on to Dry Valley Road to H1SMC, or the North Maybe Mine to NDR. Alternatively, H1SMC and NDR can be accessed by way of the Blackfoot River Road, Diamond Creek Road, Stewart Canyon Road, and then to H1SMC, or to NDR through the NMM.

In addition to the primary access roads, the mining areas are intersected by a series of recreational and agency (Caribou County and/or USFS) gravel roads and mine truck haul roads that provide access to these areas. In extreme weather, however, these roads may be seasonally closed.

UPRR main line runs parallel to Highway 30 through Soda Springs and includes a north-bound rail spur that services industrial facilities north of town, including the CPP and mine areas, that runs parallel to Highway 34 and the Blackfoot River Road.

5.3 Climate

The climate in southeastern Idaho is influenced by topographic features and prevailing westerly winds from the Pacific Ocean. Temperature and precipitation amounts are strongly dependent on elevation, with higher elevations experiencing lower temperatures and higher amounts of rain and snow.

The reported average annual temperature at Conda of the last 30 years is 42°F[1]. The warmest months are July and August with an average temperature of 82°F and a recorded high of 101°F[2]. The lowest temperatures occur in December and January with an average temperature of 22°F and a low of -37°F. The average annual rainfall is about 19 inches and total snowfall averages 109 inches per year. January has the most snow with an average of about 26 inches.

Mining at the sites occurs year-round. Severe cold weather or significant snow events can affect mining for brief periods during winter. Exploratory drilling typically occurs between July and October to account for seasonal road conditions on the drill roads.

[1] https://data.mpnnow.com/weather-data/caribou-county/16029/

[2] https://en.wikipedia.org/wiki/Soda_Springs,_Idaho

5.4 Sufficiency of Surface Rights, Site, and Local Resources

Figure 5.1 through Figure 5.4 show the property boundaries and locations of major access roads, mining pits, supporting infrastructure, water and power sources and supply, overburden storage areas, and rail loadout sites.

RVM has all supporting infrastructure required for mine operations. Infrastructure and facilities will require development to conduct mining at H1SMC and NDR. Project infrastructure is discussed in more detail in Item 18.0.

Currently, all projects have existing or reasonably available surface rights, power and water supply, mining personnel, and overburden disposal areas that are sufficient. Itafos controls all surface rights required for mining and the approved MRP (selected alternative) in the FEIS and ROD includes the use of SMCM and NMM.

Water is supplied to the Conda mines and projects via water wells. Because of the remote locations of the mines, electricity requirements are limited to power provided by diesel generators. The WV Tipple is powered via transmission and distribution lines.

Mining personnel are readily available in the area. Southeastern Idaho has a long history of exploration and mining activities. Phosphate ores have been mined commercially in Caribou County since the 1920s. The region is economically dependent on the mining and related industries and mining personnel are drawn from Caribou, Franklin, Bannock, Bear Lake, and Lincoln (Wyoming), counties. Currently, through direct employment and use of mining and other contractors, Conda operations are responsible for over 500 locally employed people at the plant and mine site. Within the local region, approximately 1,700 direct, indirect, and induced jobs are supported by the Conda operations.

6.0 HISTORY

Phosphate exploration and mining began in earnest in Caribou County, Idaho in the 1920s. Over the years, phosphate mining on the Property has grown to a multi-mine operation that includes several open pit phosphate mines. The CPP has an almost 60-year history of sustainable production of fertilizers.

6.1 Prior Ownership and Ownership Changes

The Conda projects consist of RVM, LCM, H1, and NDR projects that are held under leases granting surface access and phosphate mineral mining rights. Conda also controls numerous other phosphate mineral leases and properties in the vicinity which are prospective exploration targets.

As part of the merger between Agrium and Potash Corporation of Saskatchewan (now known as Nutrien), Itafos acquired the Conda projects in early 2018.

The prior ownership of the Property and ownership changes are as follows by mineral project.

6.1.1 Rasmussen Valley Mine

The RVM is located on a federal lease and a portion of a state lease. The federal lease encompassing the RVM ore deposit was originally issued to J.A. Tereling & Sons in 1955. The Stauffer Chemical Company later acquired the lease in 1968, followed by FMC Corporation (date unknown), and then by Astaris Production LLC in 2000. In 2004, the lease was transferred to Agrium. Itafos currently holds the lease and conducts mining operations at the RVM as part of their ongoing operations. Mineral and surface rights of the RVM are administered by the United States BLM and the USFS, respectively.

6.1.2 Lanes Creek Mine

The LCM is located on private lands owned in fee by the Bear Lake Grazing Company (BLGC). Itafos holds the LCM surface and mineral rights as a fee lease from the BLGC. LCM was part of an initial 400-acre land patent obtained by George M. Pugmire in 1888 under the Desert Land Act. Sometime later, LCM was transferred to the Bear Lake Grazing Association, a cooperative of local area ranchers that included Pugmire and was the predecessor in interest to BLGC.

In early 1970, John Archer leased a portion of the original land patent from the BLGC and later sold the lease to Alumet. Archer maintained an asset interest with the rights of participation (overriding royalty). Alumet was a partnership between Earth Science, Inc. (20%), National Steel Corp. (40%), and the Southwire Co. (40%).

J.R. Simplot Company (Simplot) acquired the LCM lease in 1997 along with other Alumet phosphate holdings. Simplot conducted reclamation and stabilization activities of the existing overburden storage area and maintained the LCM’s inactive status. Alumet retained an overriding royalty interest in the lease.

In 2015, Agrium acquired the LCM lease from Simplot as part of a Lease Exchange Agreement (LEA) and conducted additional site stabilization activities in preparation to reopen the LCM. Also, in 2015 Agrium gained approval from the IDL to mine the lease. Currently, Itafos is conducting reclamation of the LCM lease as part of their ongoing phosphate operations.

6.1.3 Husky1 and North Dry Ridge

Agrium acquired the H1 and NDR leases as part of the 1995 acquisition of Nu-West Industries, Inc. Prior to Agrium's 1995 acquisition, the leases were held by several entities. Mineral and surface rights of the H1SMC and NDR leases are administered by the BLM and the USFS, respectively. Itafos is the current lease holder for H1 and NDR through asset acquisition from Agrium.

6.1.4 Maybe Canyon Lease

The MC lease is held by Nutrien and is located directly between the proposed KPLA/H1 and NDR pit areas. The MC lease contains the historical NMM and SMCM (mining operations ceased in 1993) where access roads and partially backfilled open pits still exist. Itafos is proposing to bifurcate the MC lease and acquire the parts of the MC lease that cover portions of the NMM open pit, SMCM open pit, and mining features. Portions of the NMM pit will be bifurcated for backfilling the initial overburden from NDR.

6.2 Exploration and Development History

This item describes the type, amount, quantity, and general results of exploration and development work undertaken by previous owners, or operators, at each of the projects.

6.2.1 Rasmussen Valley Mine

Exploration commenced at RVM in 1912 when two exploratory trenches were constructed by the USGS. Subsequent trenching in 1948 was conducted in the area as part of a larger program to study the area known as the Western Phosphate Field. Exploratory drilling has occurred intermittently at the RVM area since 1969; most recently from 1998 through 2010 by Agrium as part of the mine permitting process. Through 2011, over 100 exploratory drill holes have been completed in the RVM area at depths up to 550 feet.

In 2011, Agrium submitted an MRP to the BLM to develop the RVM Lease that includes both on-lease and off-lease activities. The BLM and the USFS in cooperation with the Idaho DEQ and the Walla Walla District of the US Corps of Engineers prepared an EIS to consider Agrium's Proposed Action for mining on the RVM Lease and the construction and operation of mine-related facilities outside the Lease. The EIS evaluated the impacts and effects of the Proposed Action, and in January 2017 the BLM issued a ROD granting approval to proceed with the final permitting, development, and construction of the RVM Lease and MRP.

Agrium began development of the RVM in 2017 and commenced phosphate mining operations at the mine in 2018.

6.2.2 Lanes Creek Mine

Phosphate deposits within the LCM were first explored in 1912 by the United States Geological Survey (USGS) and by other entities throughout the 1970s. The USGS exploration included two exploratory trenches/pits across the phosphate ore beds. The trenches transected the entire ore deposit at this location. The original trenches were further explored, resampled, and later incorporated into the 1948 Western Phosphate Field study. In 1975, additional trench areas in the LCM area were excavated and mapped, likely by mining companies seeking to identify and extract the phosphate ore.

Alumet drilled the phosphate mineral zone on the LCM Lease in 1974, 1977, and 1978. In June 1978, Alumet submitted an MRP to the IDL proposing two years of phosphate mining and production of approximately 100,000 tons of phosphate ore. The initial plan was subsequently approved. In 1979, Alumet submitted an MRP amendment proposing additional mining operations that would remove up to 1.5 Mt of phosphate ore. Alumet's

1979 MRP also suggested three possible additional mine phases that could potentially extract significantly more phosphate. In 1979, the IDL approved the proposed 1.5 Mt phosphate MRP amendment. Alumet opened the LCM in the late 1970s and was operated until the mid-1980s removing only the upper portion of the ore body and modest volumes of phosphate ore. Mining activities by Alumet disturbed approximately 36 acres. Exact mine production during this time is not known.

Simplot acquired the LCM Lease in 1997 but did not conduct any mining. Simplot did conduct limited reclamation and stabilization of the existing overburden storage area in 1998 and conducted environmental monitoring activities in subsequent years.

In 2009, as part of a due diligence, Agrium drilled 26 exploration holes on the Property. In 2012, an option agreement was executed with Simplot which allowed Agrium to complete additional drilling and due diligence. In 2013, Agrium drilled an additional 24 in-fill exploration holes. Upon final acquisition from Simplot in 2015, Agrium conducted additional site stabilization activities in preparation to reopen the mine.

In 2015, Agrium submitted an MRP to IDL in accordance with the Idaho Surface Mining Act and the Idaho Administrative Procedures Act 20, Title 03, Chapter 02 to mine phosphate resources and reclaim historical mining areas on the private mineral lease. Agency approval to reopen the LCM was subsequently granted.

Itafos is currently conducting reclamation activities at LCM, and mining has ceased.

6.2.3 Husky1 and North Dry Ridge

At H1, an exploration drilling program was conducted from 1969 to 1970, 1974, and 1981. Over 175 exploration borings were drilled during these years. Subsequently, Agrium drilled 55 holes in 2011, 95 holes in 2012, and 86 holes in 2014.

Exploration drilling at NDR was conducted in 1989 and 1990 and included 260 exploration borings. These activities occurred prior to Agrium's 1995 acquisition of Nu-West Industries, Inc.

In April 2009, Agrium submitted the H1 and NDR Exploration Drilling Plan of Operations to the BLM.

In June 2010, the BLM Pocatello field office and the USFS Caribou Targhee National Forest completed an environmental assessment (EA) for the H1 and NDR Phosphate Exploration Project exploratory drilling in accordance with NEPA requirements. The BLM/USFS issued a Finding of No Significant Impact on June 16, 2010. With these approvals, 23 exploration drill holes were completed at NDR in 2013 to provide additional data for consideration.

In 2012, Agrium submitted an MRP to the BLM Idaho Falls District for the H1 and NDR mining project. The company proposed open-pit phosphate mining on the federal leases and Known Phosphate Lease Areas (KPLAs). In 2014, after three years of baseline data collection, Agrium suspended all permitting efforts and notified the BLM to suspend work on the related NEPA analysis.

In January 2018, Itafos acquired Conda Phosphate Operations from Nu-West. At that time, Nu-West was a wholly owned subsidiary of Agrium and is now a wholly owned subsidiary of Nutrien Ltd. Assets transferred in that sale included the phosphate production facilities, active phosphate mines, and phosphate mineral leases (including the H1 and NDR Leases). The sale effectively put agreements into place between Itafos and NuWest that will facilitate the transfer of portions of the MCM lease to Itafos.

In 2019, Itafos drilled 21 metallurgical core drill holes at H1 and 23 exploration drill holes. No drilling was completed at NDR. In 2022, Itafos completed an additional 24 exploration drill holes at H1SMC and 29 holes at NDR. Details of the 2019 and 2022 drilling programs are summarized in Item 10.0. Itafos acquired high resolution Light Detection and Ranging (LiDAR) surveys for both NDR and H1SMC, the details of which at found in Item 9.5.

6.3 Historical Mineral Resource and Mineral Reserve Estimates

6.3.1 Rasmussen Valley Mine, Lanes Creek Mine, H1, and North Dry Ridge

In its Annual Information Form (AIF) published February 22, 2017, Agrium Inc. published the Mineral Resource and Mineral Reserve estimates shown in Table 6.1. Agrium's disclosure in the AIF related to the estimates is as follows:

"Towards the end of 2015, Agrium began mining from the Lanes Creek Mine in conjunction with mining at the North Rasmussen Ridge Mine. There were no further updates to the Rasmussen Valley Reserve estimate, therefore the final 2014 estimate of 10.1 million [metric] tonnes remain in place. Agrium's updated total Mineral Reserves for [Itafos Conda] are summarized in the Total Reserves Estimates table below. The Total Resource Estimates table is a summary for [Itafos Conda] only." [Bracketed text added for clarification.]

Table 6.1: Historical Mineral Resources and Reserves Estimates for Conda Projects

The table below summarizes the mineral reserves estimates regarding CPO as at December 31, 2016:

Mining Operation	Ore Tons (metric)[(1)]	% P_2O_5	Mine Life (years)[(2)]
CPO Proven & Probable Reserves	15,133,952	25.0	7.0

Notes:

(1) The concentration of recoverable mined ore tonnes 2.17 million wet tonnes mined to 1.30 million dry tonnes of beneficiated rock at 29.7 percent P_2O_5 is 59.9 percent for CPO (three-year running averages). This includes 0.08 and 0.36 million tonnes of Monsanto/P4 ore that was beneficiated during 2015 and 2016, respectively.

(2) Estimates are based upon proven and probable reserves and average annual mining rates of approximately 2.15 million tonnes for CPO.

The table below summarizes the mineral resources estimates regarding CPO as at December 31, 2016:

Mining Operation	Resource Classification	Ore Tons (metric)	% P_2O_5	Mine Life (years)
CPO	Inferred	18,000,000	25.10	7.3

Notes:

(1) Mineral reserves are not included in mineral resource estimates.

Note - "CPO" refers to Conda Phosphate Operations.
Source: Agrium Inc., Annual Information Form (AIF), Year Ended December 31, 2016, p. 50, (February 22, 2017).

The QP has not done sufficient work to classify the historical estimate as current Mineral Resource and Mineral Reserve; and Itafos is not treating the historical estimate as current Mineral Resource and Mineral Reserve.

Based on the information in the AIF, it is impossible to accurately determine the location of the historical Mineral Resources and Mineral Reserves stated by Agrium

The source and date of the historical estimates, including any existing technical report is the Agrium Inc., AIF, Year Ended December 31, 2016, p. 50, (February 22, 2017). No technical report was found supporting these estimates.

The relevance and reliability of the historical estimates are impossible to determine because there is no technical report or other supporting information available to the QP. For this reason, the QP cannot provide the key assumptions, parameters, and methods used to prepare the historical estimates, and it is not possible to state whether the historical estimates use categories other than the ones set out in NI 43-101 Items 1.2 and 1.3, nor to include an explanation of the differences.

More recent estimates or data available to Itafos are stated in this report in Item 14.0 and Item 15.0. The work done to upgrade the historical estimate as current is described in this Technical Report.

6.4 Production from the Property

6.4.1 Rasmussen Valley Mine

Itafos has conducted open-pit mining from the RVM since January 2018 and total phosphate ore production has been approximately 8.7 M tons.

6.4.2 Lanes Creek Mine

At LCM, Alumet developed an open pit mine in 1978, which was in operation until 1988/1989. However, Alumet's operations removed only the upper portion of the LCM deposit and reportedly produced very modest tonnages. From 1978 to 1984, an estimated 77,000 tons of phosphate ore was produced from LCM.

Agrium commenced production in 2015 and production at LCM ceased in 2020.

6.4.3 Husky1 and North Dry Ridge

No production has occurred on the H1 and NDR leases. Historical production did occur in the SMCM, the southernmost portion of which is included along with H1 to comprise H1SMC. Prior owners operated the SMCM between 1979 and 1984. There are no public records of production tonnages specifically for the small portion of the SMCM that Itafos proposes to be part of the bifurcation of the MC lease.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

This Item contains forward-looking information related to regional and local geology, mineralization theory and model for the Conda projects. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: number and extent of observations from historical and current mapping, drilling, and geological fieldwork.

7.1 Regional Geology

7.1.1 Stratigraphy

The Conda properties lie within the Rocky Mountain Physiographic Province in southeastern Idaho, United States of America, see Figure 7.1. The geologic units within the study area are generally marine sedimentary deposits that range from Pennsylvania to recent in age. The Phosphoria Formation contains the phosphatic beds that form the basis for this current investigation into phosphate mineralization at the Project deposits.

A detailed list of the stratigraphic units of the area are described below in reverse stratigraphic order, and in Figure 7.2.

Alluvium/Colluvium – Quaternary

Unconsolidated sand, silt, and gravel in drainages and along hillsides that averages 0-60 feet in thickness.

Basalt – Quaternary

Dark grey olivine basalt that averages 0-150 feet in thickness.

Dinwoody Formation – Triassic

Composed of interbedded grey limestone that grades downward into calcareous shale and siltstone with thin limestone interbeds. Surficial weathering of the Dinwoody Formation forms dense, clayey soils. Forms rounded slopes in outcrops. The formation averages 1,700 to 2,200 feet in thickness.

Phosphoria Formation – Permian

The Phosphoria Formation is split into three members. In reverse stratigraphic order they are: Cherty Shale, Rex Chert, and Meade Peak Phosphatic Shale.

The Cherty Shale Member averages 100-200 feet in thickness and comprises thinly bedded dark brown to black, cherty mudstone, siliceous shale, and argillaceous chert.

The Rex Chert Member is composed of thick-bedded black to bluish-white or occasionally reddish-brown chert with small amounts of interbedded mudstone and lenticular limestone. The member is resistant to weathering and crops out along prominent ridges that form marker beds across the region. The Rex Chert Member averages 30-80 feet in thickness.

The Meade Peak Phosphatic Shale Member (Meade Peak) is the host of the phosphate mineralization in the Southeast Idaho Phosphate District. The Meade Peak Member was deposited in an interior marine basin that extended across parts of Idaho, Utah, Wyoming, and southwestern Montana. The basin had a maximum depth of 1,000 ft to 1,600 ft and was an area of moderate to intense water upswelling, which brought cold, nutrient-rich water to the surface, causing increased algal and plankton productivity. The resulting steady rain of organic debris on the paleo seafloor was the source of the high-grade phosphorite deposits (Hein, J. R., Mcintyre, B. R., Perkins, R. B., Piper, D. Z., & Evans, J. G., 2004), (Hein, J. R., 2004), (Piper, D. Z., & Link, P. K., 2002), (Moyle, P. R., & Piper, D. Z., 2004).

The Meade Peak Member averages 200 feet in thickness across the region where approximately 50 feet comprises two phosphatic mineralized zones and the remaining thickness comprises unmineralized interburden material. Further discussion on the phosphate mineralized zones is presented later in this item.

Grandeur Member of the Park City Formation – Pennsylvanian

Massive to thickly bedded grey dolomite that is occasionally sandy or argillaceous and may be recrystallized and averages 65-100 feet in thickness.

Wells Formation – Pennsylvanian

The upper member of the Wells Formation averages 2,200-2,400 feet thick and consists of buff colored sandy limestone, grey to reddish brown sandstone, dolomitic limestone, and interbedded grey limestone and dolomite. The lower member of the Wells Formation averages 850-950 feet thick and consists of medium-bedded, grey, cherty limestone with some interbedded sandstone.

7.1.2 Structural Geology

The structural geology of the region is characterized by subparallel folded mountain ranges separated by thinly filled valleys (Mabey, Don R. and Oriel, Steven S., 1970); (Fennerman, Nevin M., 1917). The Northwest trending thrust faults, folds, and large-displacement tear faults perpendicular to the fold axis in the region were formed by compressional forces during the late Cretaceous, specifically during the Sevier Orogeny. Later, high-angle normal faults associated with horst and graben structures were mostly formed during Basin and Range extension during the Miocene, approximately 17 Ma. The resulting structural features of the compression and extension generally trend northwest-southeast and have disrupted the originally flat-lying strata to be folded and faulted.

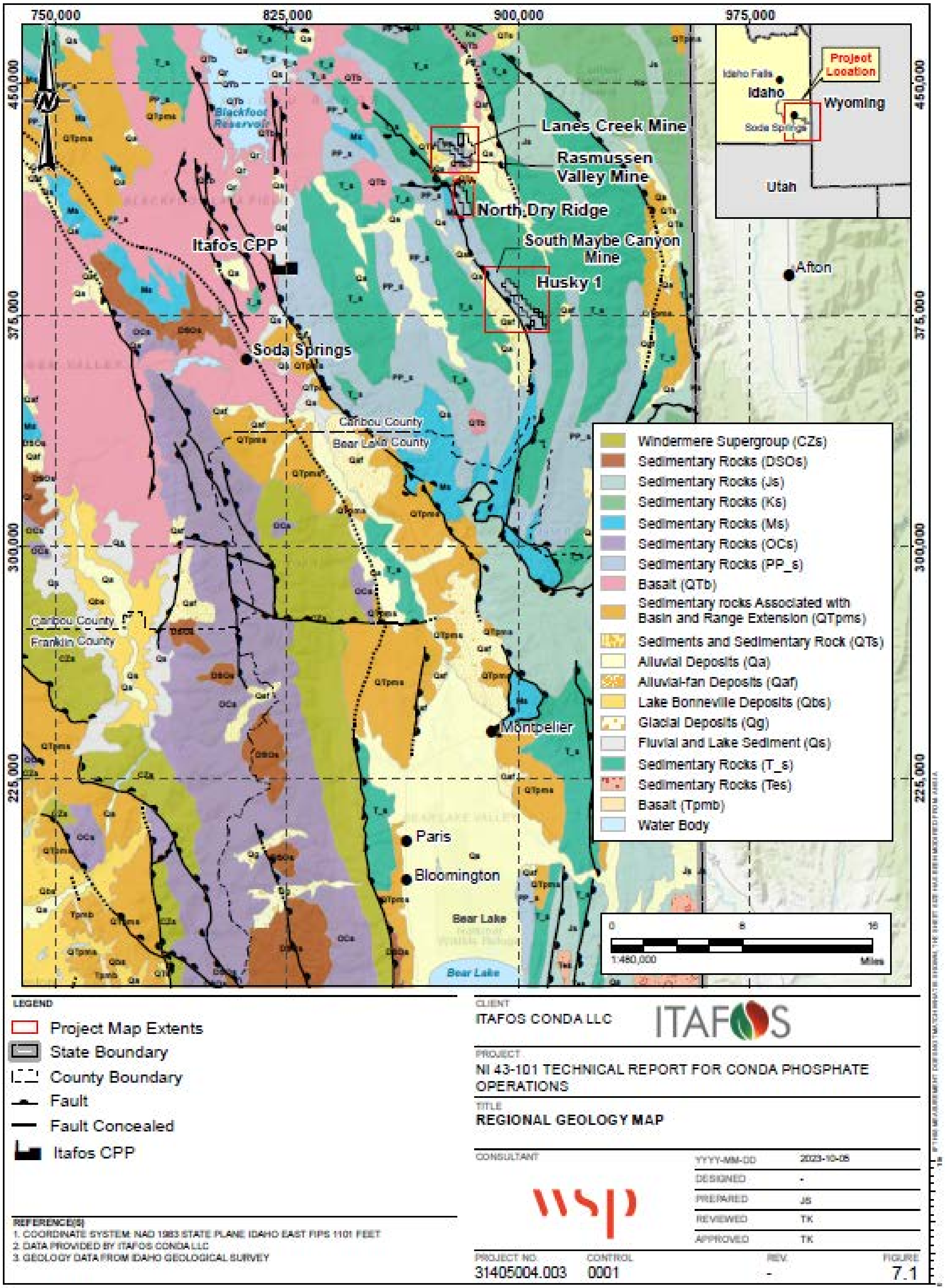


Figure 7.1: Regional Geology Map

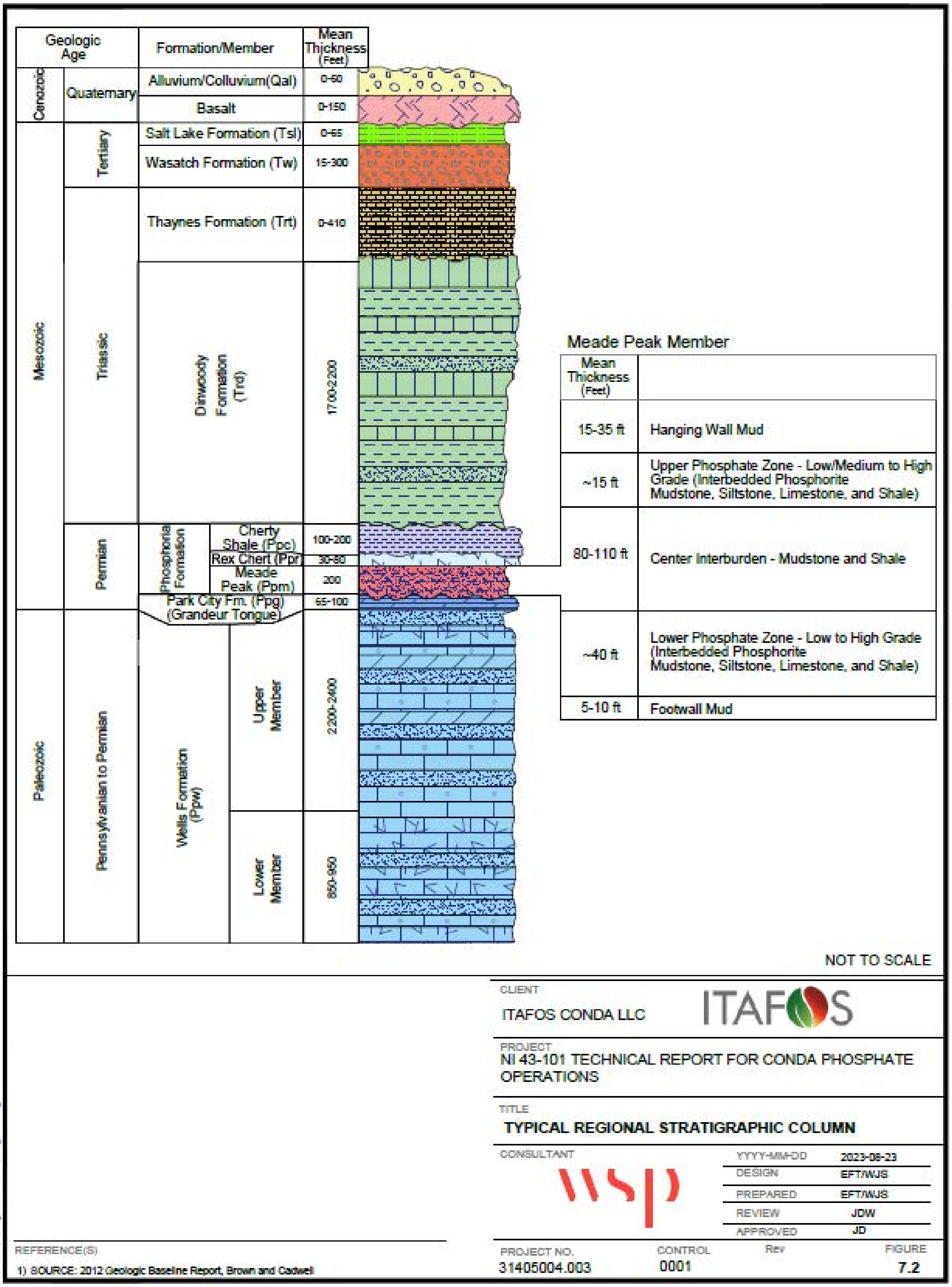


Figure 7.2: Typical Regional Stratigraphic Column

7.2 Conda Projects Geology

The local and deposit-scale geology of the Conda projects are generally similar in that they are structurally dominated by a series of northwest / southeast trending anticlines and synclines with thrust and normal faults disrupting the strata.

The Meade Peak Member of the Phosphoria Formation contains the phosphate mineralization within the Conda Projects and is overlain by the Rex Chert Member and underlain by the Park City Formation. The Quaternary Alluvium is not very extensive and where it is present it is only about 5 feet to 20 feet thick.

The Meade Peak Member is broken into five mining zones throughout the Conda projects where the Upper Phosphate and Lower Phosphate Zones are the primary phosphate mineralized zones. The significant mineralized zones encountered on the property are shown below:

- Upper Overburden Zone (Hanging Wall mud).
- Upper Phosphate Zone – Low/medium to high grade phosphate zone. Interbedded phosphorite, mudstone, siltstone, limestone, and shale.
- Center Interburden Zone – Shale and mudstone.
- Lower Phosphate Zone – Low to high grade phosphate zone, interbedded phosphorite, mudstone, siltstone, limestone, and shale.
- Lower Underburden Zone (Footwall mud) – Reddish brown siltstone with black fossiliferous siltstone and some phosphorite.
- The mean thickness of the mineralized zones within the Conda projects are shown in Table 7.1.

Table 7.1: Conda Projects Mineralized Zone Mean Thicknesses

Mining Zone	Bed Name	Phosphate Grade	Mean Thickness (Feet)					
			RVM		NDR		H1SMC	
			Bed	Zone	Bed	Zone	Bed	Zone
Hanging Wall Mud		-	20.29	20.29	21.8	21.8	15.11	15.11
Upper Phosphate Zone	D1	High	3.33	21.69	3.32	25.88	3.40	26.27
	D2 Parting	-	2.29		2.92		5.20	
	D3	High	3.28		3.81		4.32	
	D4 Parting	-	1.78		3.62		2.80	
	Upper Interbed	Medium	3.96		4.32		4.29	
	D5-1	Low-Medium	3.46		3.8		2.76	
	D5-2	Low-Medium	3.61		4.09		3.49	
Center Interburden	Upper Center Interburden	-	96.65	106.32	118.687	118.69	92.50	92.50
	F Marker Bed	-	4.7					
	Lower Center Interburden	-	4.98					
Lower Phosphate Zone	C	Low-Medium	-	33.16	4.89	28.36	4.67	28.70
	False Cap	-	6.26		6.61		4.72	
	Upper B	Medium-High	4.27		4.58		4.35	
	B Parting	-	3.12		2.45		2.11	
	Lower B	Medium-High	6.59		2.94		3.66	
	A Cap	Low-Medium	3.84		3.04		4.27	
	A Bed	High	5.48		3.85		4.92	
Footwall Mud		-	5.92	5.92	2.63	2.63	4.98	4.98

Note: 1: Values in table are mean true thicknesses within resource estimation limits.

7.2.1 RVM Structural Geology

The Snowdrift Anticline is the geologic structure that defines the RVM strata. The Snowdrift Anticline is a northwest-southeast trending anticline that plunges gently southeast. RVM is located on the southwest limb, see Figure 7.3. The Snowdrift Anticline resulted in the geometry of the flat lying beds of the Phosphoria Formation to be modified by folding so that they now strike northwest/southeast and plunge southwest within the RVM, as shown in Figure 7.4. Both limbs of the anticline are very steep where the beds are near vertical or overturned. The strata of the Phosphoria Formation outcrop along the limbs of the anticline.

The Snowdrift Anticline is bound on the east by the Lanes Creek Fault, which dips at 83 degrees east with approximately a 400-foot normal displacement, and on the west by the Enoch Valley Fault, which is a normal fault that dips at 80 degrees west and can have up to 3,000 feet of displacement. The Rasmussen Fault strikes east-west and intersects the Snowdrift Anticline axis north of the RVM area. The Rasmussen Fault has approximately 4,000 feet of left-lateral displacement and truncates the Phosphoria Formation in the RVM area.

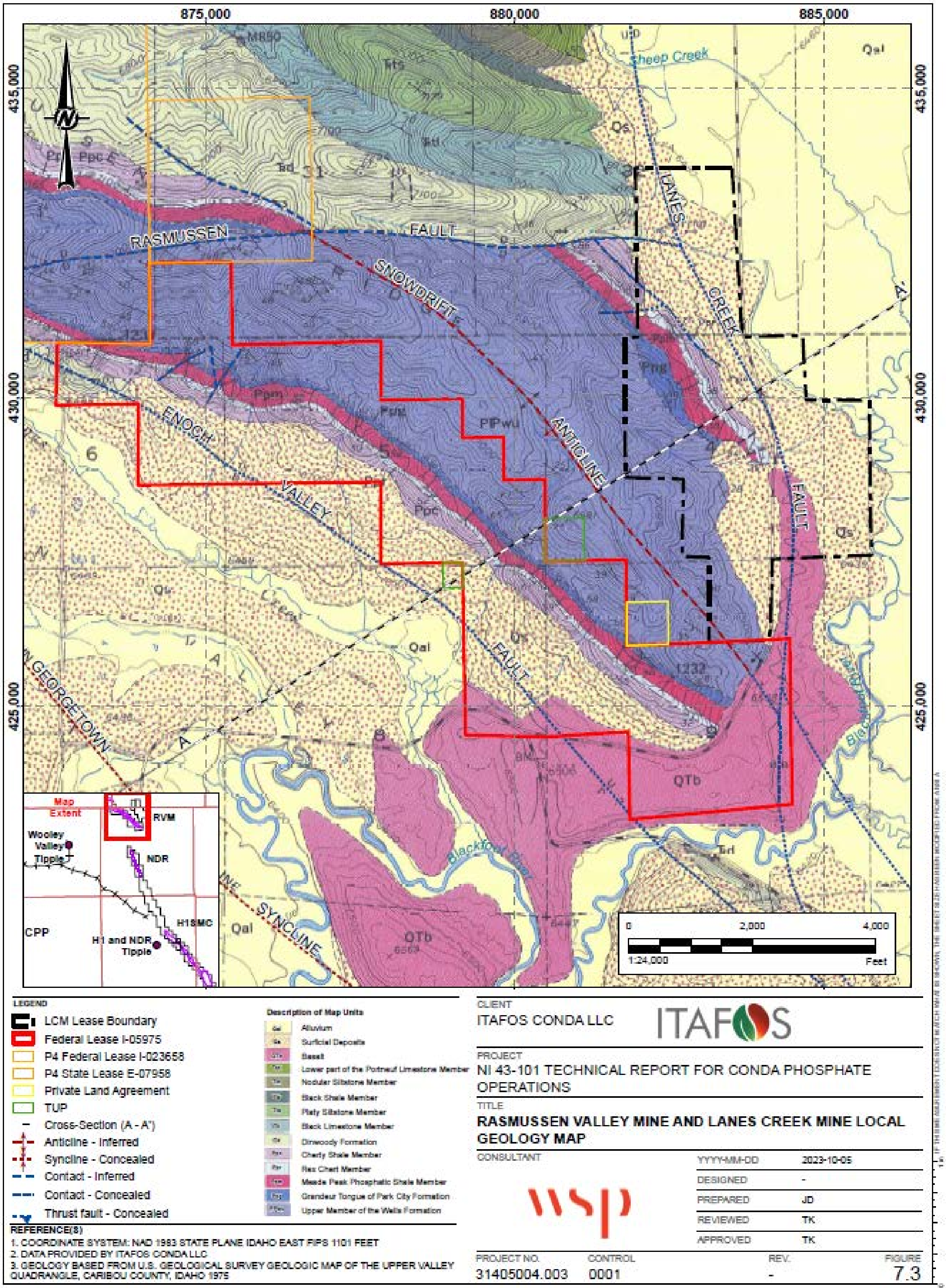


Figure 7.3: RVM Local Geology Map

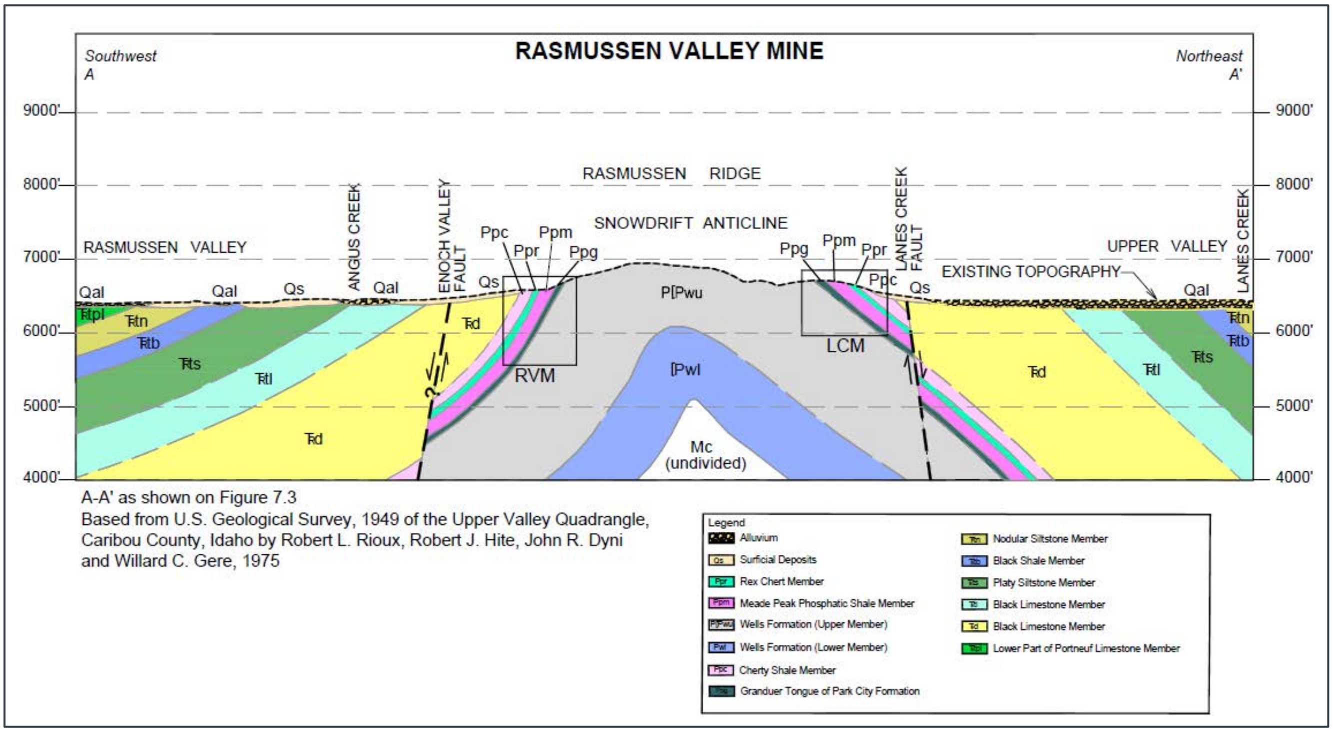


Figure 7.4: Regional Cross Section, Snowdrift Anticline

7.2.2 NDR and H1SMC Structural Geology

The structural feature that dominates the NDR and H1SMC areas is the northwest trending North Dry Valley Anticline. NDR and H1SMC are located on the northeast limb of the anticline and as such, the strata of NDR and H1SMC dips very steeply to near vertical to the northeast, see Figure 7.5 and Figure 7.6.

Faulting in the northern portion of the NDR lease has forced the Meade Peak Member of the Phosphoria Formation to uplift to the overlying Dinwoody Formation. This has resulted in the absence of the Meade Peak Member north of the Blackfoot normal fault within the NDR property.

Additional folding and faulting are found in the southern portion of the H1SMC area, notably, the Stewart Anticline which trends northeast/southeast. The axes of the Stewart Anticline are within the southern portion of the H1SMC property and allow for a large outcrop area of the Meade Peak Member, see Figure 7.7 and Figure 7.8.

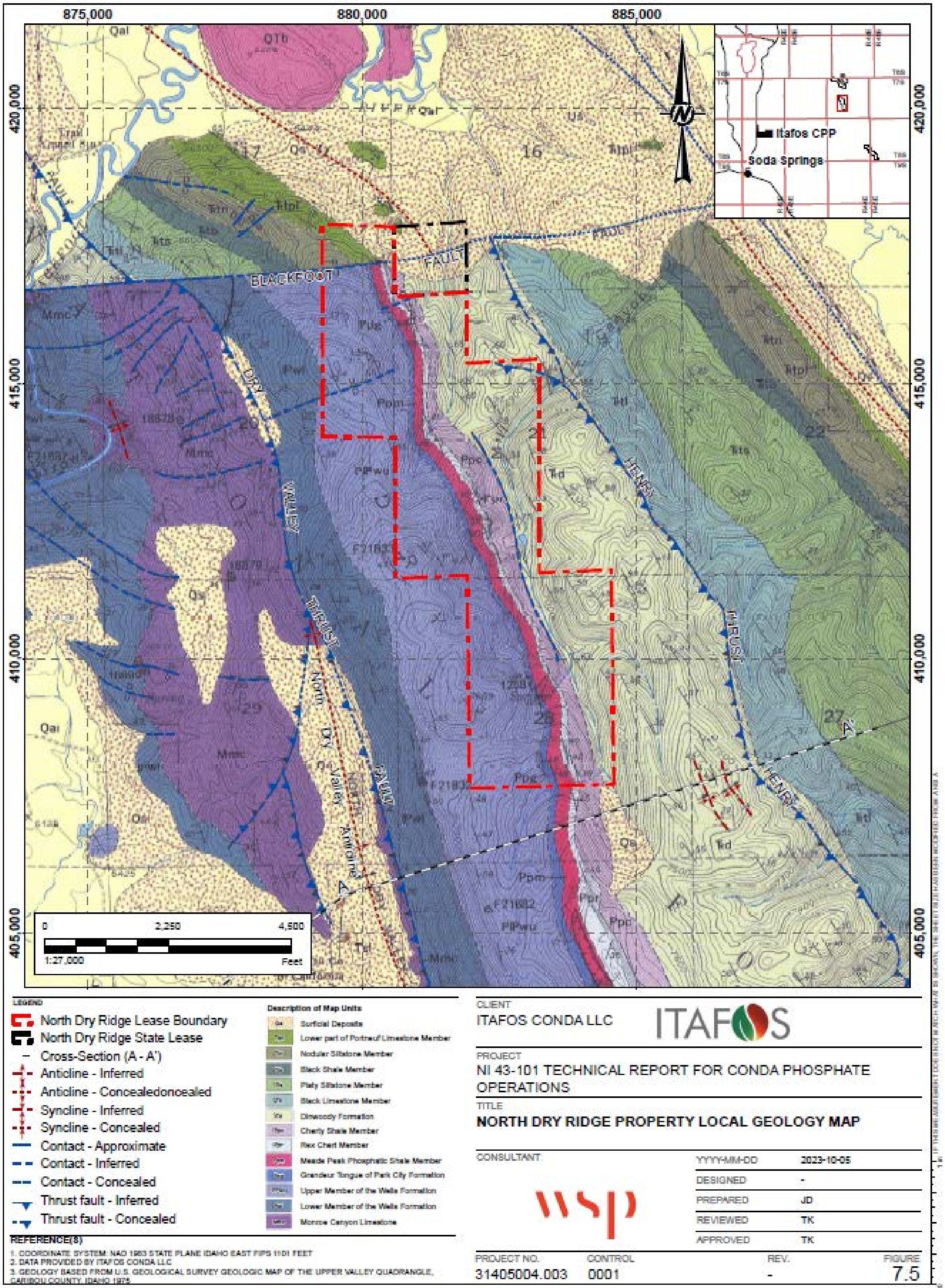


Figure 7.5: NDR Property Local Geology Map

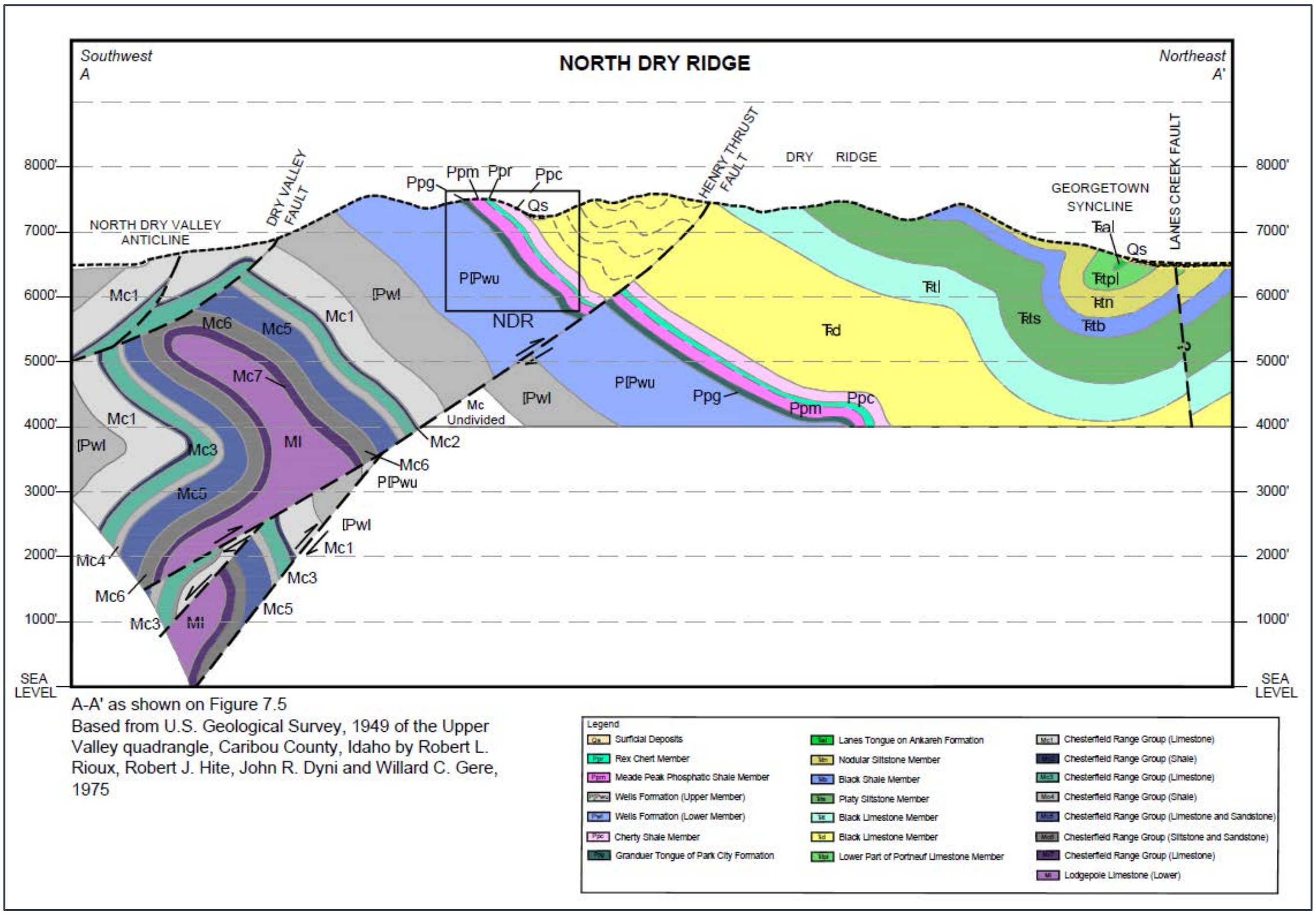


Figure 7.6: Regional Cross Section, North Dry Valley Anticline, North Dry Ridge

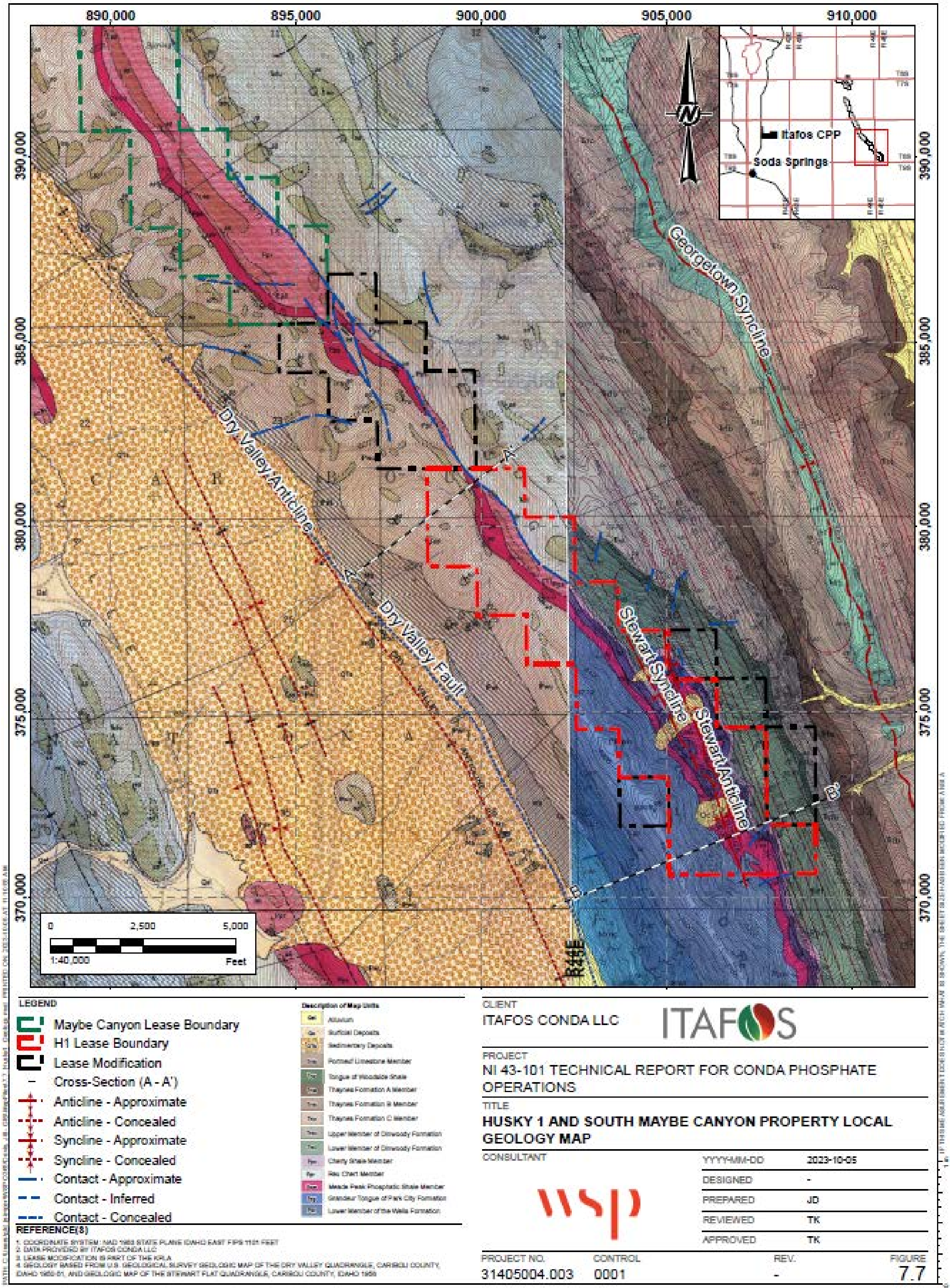


Figure 7.7: H1SMC Property Local Geology Map

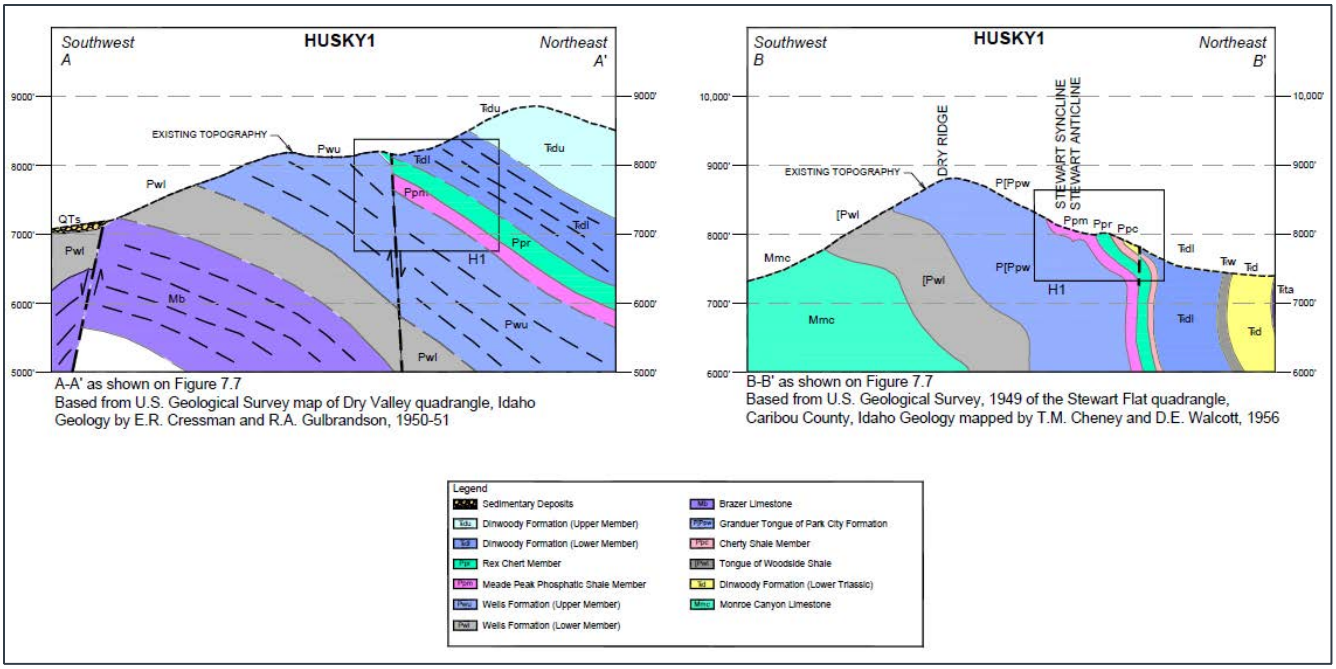


Figure 7.8: Regional Cross Section, North Dry Valley Anticline, H1SMC

8.0 DEPOSIT TYPES

This Item contains forward-looking information related to structural geology and grade interpretation and control for the Conda Projects. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: number and extent of observations from historical and current mapping, drilling, and geological fieldwork.

The following is a description of the mineral deposit type being investigated and the geological model or concepts being applied in this TR.

The phosphate mineralization presented in this report is sedimentary in nature, occurring in a conformable sequence of alternating phosphatic and weakly to non-phosphatic shale, mudstone, carbonate, and chert beds within the Meade Peak Member of the Permian Phosphoria Formation. The Phosphoria Formation occurs within the Western Phosphate Field that occupies more than 135,000 square miles, spanning Eastern Idaho, Southern Montana, Western Wyoming, and the northern half of Utah (Sheldon, 1989).

The phosphate mineralization encountered in the Meade Peak Member is stratigraphic in nature, and the deposit type is considered a typical example of a marine sedimentary phosphate deposit. The phosphate mineralization occurred during the primary depositional processes and there are no known secondary phases of phosphate mineralization or enrichment identified in the deposits.

The beds of the Meade Peak Member were deposited within a marine sedimentary basin within the Phosphoria Sea that marked the western margin of the North American craton approximately 250 Ma. During the period that the Meade Peak Member was being deposited, access to the open ocean was intermittently restricted by barrier islands during cyclical periods of eustatic sea level change resulting from periods of glaciation and deglaciation (Sheldon 1984). This cyclical process resulted in the alternating beds of phosphatic shale and mudstone with layers of non-phosphatic shale, carbonate, and chert beds.

Low sea levels during periods of glaciation gave rise to periods of intense upwelling currents of cold nutrient rich waters entering the basin; these nutrient rich waters would become confined within the basin by the barrier island structures and would result in algal blooms. Restricted access to the open sea limited recharge or mixing of the waters in the basin while the lower sea level and restricted access limited the impacts of both marine carbonate deposition as well as terrestrial sedimentation during development of phosphatic beds.

The phosphate mineralization within the Meade Peak Member consists of apatite pellets, oolites, and sand grains, some of which are further cemented into clusters of pellets and grains in an apatite cement; the apatite within the Meade Peak is entirely in the form of carbonate fluorapatite (Altschuler et. Al. 1958).

Individual beds of the Meade Peak Member are laterally continuous over significant distances, with some beds commonly found distributed over tens of thousands of square miles within the Western Phosphate Field (Sheldon 1989); however, as discussed in Item 7.0, the thickness and geometry of the beds has been locally impacted on a deposit scale by both primary depositional variability as well as post-depositional structural modification due to both regional and deposit scale faulting and folding.

Exploration programs described in this TR have taken the stratigraphic nature of the mineralization into account and drill hole spacing, sampling methodology, and grade analyses have been designed to evaluate the structural and grade continuity of the targeted phosphatic beds at the deposit scale.

9.0 EXPLORATION

This Item discusses the nature of all relevant historical and current exploration work, other than drilling conducted by or on behalf of Conda for the three Conda Projects that are the focus of this TR. Non-drilling exploration data evaluated as part of the current study on the three projects included:

- Conda grade control trench samples and analytical results from RVM
- Surface exploration trench samples and analytical results from NDR
- Downhole wireline geophysical logs performed on the majority of the drill holes across the Conda Projects
- Regional and deposit scale geological mapping
- LiDAR acquisition for NDR and H1SMC

The following discussion presents a summary of the methods and procedures for data collection, any potential biases that may impact the representativeness and reliability of the data, and a discussion of any significant results and interpretations derived from the non-drilling exploration data.

9.1 RVM Grade Control Trench Samples

The geological database provided by Conda mining and geology personnel for RVM included 44 grade control samples. These samples were collected in 2019 by Conda mine geologists and grade control technicians as part of the ongoing mining operations.

The samples were collected from 100-foot spaced sections along the top of the benches in the mine. The section lines were oriented orthogonal to the strike of the beds such that the samples represented a section through the stratigraphic sequence. Given the subvertical dip of the stratigraphy in the current mining areas at RVM, the samples can be considered a reliable representation of the true thickness of the beds.

The Conda mining grade control team staked out the roof and floor contacts of the beds based on the visual identification of phosphatic and weakly- to non-phosphatic beds. A composite sample representing the full thickness of each identified bed was then collected manually using shovels and picks. The grade control sampling trenches were surveyed by the Conda mining team to allow for reliable 3D positioning of the data.

The samples were bagged in 2-gallon bags and delivered to the Conda onsite laboratory at the CPP, where they underwent sample preparation and analyses. Sample preparation comprised crushing to minus 1 inch and then riffle splitting. One split was dried for 0.5 hours to remove surface moisture and then was used to perform moisture content and P_2O_5 head grade analysis. The second split was placed in a wash bottle on a roller for 15 minutes followed by screening using a 325 mesh to replicate the washing process at the CPP wash plant. The screened sample was dried for 40 minutes and then recovery was calculated prior to the sample being pulverized for analyses.

A suite of 18 elements were run on the washed sample using the CPP inductively coupled plasma – optical emission spectrometer (ICP-OES). The grade control sample rejects are then sent back to the mine where they are stored for three months before being recycled in the ore stockpiles or overburden stockpiles based on grade parameters of the samples.

The second split grade control samples are a good representation of the expected washed grades from the CPP Wash Plant; however they are not representative of the in-situ grades approximated from the RC drill hole samples that form the bulk of the basis for the geological models (see Item 10.0 and Item 11.0 for further discussion on drilling and sampling, respectively.

The bed pick observations from the grade control samples were used by WSP to aid in modeling the bed roof and floor surfaces; however, given the differences in analytical bases, the grade data from these samples were not used in the grade modeling process. To support structural modeling, the trenches were converted to horizontal pseudo-drill holes using the surveyed coordinates from the start and end points of the sample section lines.

9.2 NDR Exploration Trench Samples

As part of the historical exploration work on the NDR property, 40 surface trench samples were collected during the 1989 and 1990 exploration campaigns. The trenches were laid out at approximately 1,000-foot spacing on a surveyed grid across the property as a means of collecting initial geological and grade information prior to commencing with the drilling programs on the project.

The trenches were mechanically stripped using a dozer and were then surveyed by the Conda mining surveyors. The surveyors recorded and flagged the bottom of the A bed and top of the C bed for the Lower Phosphate Zone and the bottom of the D52 bed and top of the D1 bed for the Upper Phosphate Zone. The Conda mining grade control technicians then sampled the beds of each trench measuring thicknesses off these surveyed points.

The samples were bagged and sent to the CPP onsite laboratory for analysis in the same manner as the drill hole samples from the 1989 and 1990 exploration programs (see Item 10.0 for discussion.). Both head grade and washed analyses were run for all samples. The tables of analytical results for the NDR trench samples as well as the surveyed coordinates are stored in a binder at CPP and have been converted to digital format.

A selection of the trench samples was used by WSP to supplement drilling data to aid in modeling the bed roof and floor surfaces; however, given the potential differences between the samples collected from the RC drill holes versus those collected from the NDR exploration trenches, the grade data from these samples were not used in the grade modeling process. For the purposes of structural modeling, the trenches were converted to horizontal pseudo-drill holes using the surveyed coordinates from the start and end points of the sample section lines.

9.3 Wireline Geophysical Logs

Natural gamma wireline geophysical logs were performed on the majority of the drill holes across the Conda Projects as part of the standard drilling procedures for Conda and its predecessors. As is common in many sedimentary phosphate deposits, the phosphate bearing beds are readily distinguishable from the weakly phosphatic and non-phosphatic beds/units using the wireline gamma logs. Elevated counts in the gamma logs for phosphate deposits are most commonly attributed to radioactive decay of uranium that has substituted for other elements in the apatite mineral structure (Hale L.A, 1967).

As a result of the generally low lateral variability in bed thicknesses and grade variability, the beds are also commonly represented by easily distinguishable gamma signatures that allow for ease of correlation of beds between drill holes. There are instances where correlation of some of the beds from the Conda Projects was difficult via the gamma logs. In these instances, local bed thickness variability, either depositional or structurally induced, as well as less than ideal intercept angles between drill holes and the beds have resulted in structural repeats, masking or skewing of the gamma signatures for the beds, making bed name assignment, and correlation more complex.

A summary of gamma log availability by drill hole and project is presented in Table 9.1.

Table 9.1: Summary of Drill Holes with Available Wireline Gamma Logs by Project

Project	Total Drill Holes	Holes with Available Geophysical Wireline Logs
RVM	210	210
NDR	292	288
H1SMC	370	301

The gamma logs were used along with the assay results by the Conda geologists, under the supervision of their Senior Geologist, during the exploration programs to identify sample intervals for grade analysis, to correct the bed pick depths and to assign the bed names to the individual beds intercepted in the drill holes.

The use of assay results and wireline gamma logs to correct bed depth pick improves the confidence in the depth intervals as the wireline depths are more precise than the drill run counts and are a reliable tool in mitigating against mixing or cuttings loss in RC drilling and core loss in core drilling. The assay results and the gamma logs also serve as a semi-quantitative means for assigning bed names rather than a pure qualitative assignment based on the geologist's visual interpretation on RC cuttings or drill core visual logging observations.

WSP reviewed the methodologies utilized by the Conda geological team to adjust the drill depths and correlate phosphatic units during the during the September 2022 site visits as well as the model review working meetings held between WSP and Itafos. The WSP QP agreed with the wireline gamma logging and interpretive procedures applied by Conda and is of the opinion that they were being performed to appropriate industry standard practices.

9.4 Regional and Deposit Scale Geological Mapping

Regional maps from the USGS quadrangle map series (1:24,000 scale) were used to identify the surface traces of significant faults that transected the Conda Projects. The maps were also consulted for general location of contacts between geological units in the deposits; however, as the maps were not developed with the level of detail available in the Conda drilling programs, these were used for general reference only and were not used as a formal source of survey data in the geological models.

Similarly, regional and deposit scale mapping from previous studies were used to aid in identifying surface traces of the regional and deposit scale faults in the area, as well as for locating the area impacted by the overturned limb.

9.5 NDR and H1SMC LiDAR Topographic Survey

In 2021, Itafos commissioned Aero-Graphics from Salt Lake City to conduct a deposit-wide LiDAR survey which covered both NDR and H1SMC. Figure 9.1 Illustrates the extents of the LiDAR survey. Aero-Graphics prepared the following for Itafos:

- Digital aerial photography acquisition flown at a nominal ground sample distance (GSD) of 0.25 feet.
- LiDAR point cloud acquisition at a nominal rate of 5.69 points per meter (1.71 points per foot).
- Bare-earth classified LiDAR point cloud in LAS 1.2 format.
- Bare-earth digital elevation model (DEM) surface data in TIFF format with 2-foot cell size.
- 2-foot contours and planimetry at 1 inch =100 feet in DWG format.
- Digital terrain model (DTM) surface files consisting of separate layers for break lines and mass points in DWG format.
- Color orthorectified imagery in TIFF and MrSID formats at a pixel resolution of 0.25 feet.

The 2021 LiDAR DEM formed the basis for the NDR and H1SMC geological model updates and the Mineral Resource and Mineral Reserve estimates.

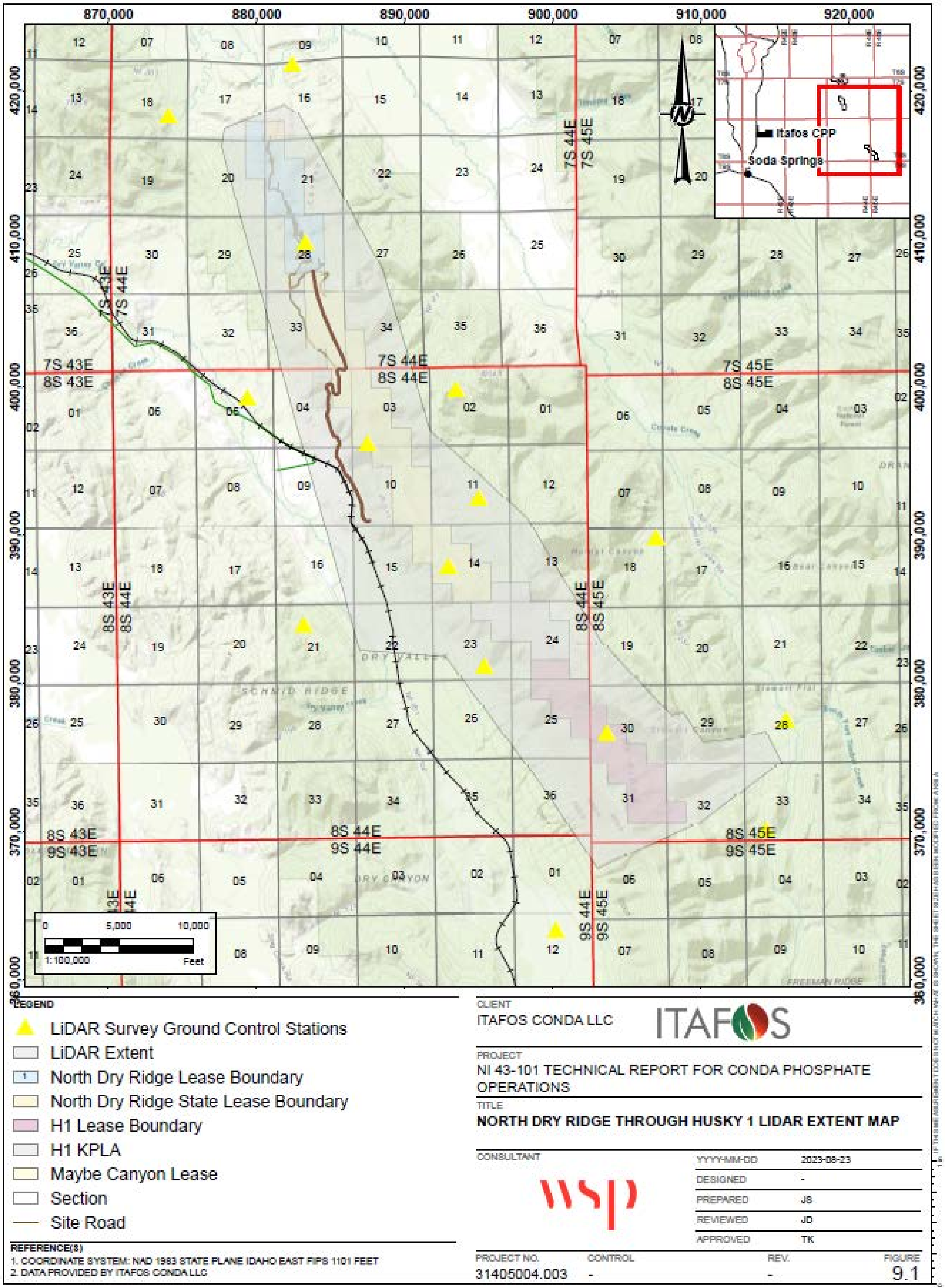


Figure 9.1: 2021 LiDAR Extent Map

10.0 DRILLING

10.1 Drilling Methods

The Conda projects have primarily been drilled using RC drilling methods, supplemented in special cases by a small number of core holes drilled for geotechnical, metallurgical, and other purposes. Drilling has been performed by several different independent drilling contractors over the various campaigns on the RVM, NDR and H1SMC projects.

For the recent drilling, Itafos contracted Haley and Aldrich (HA) and Brown and Caldwell (BC), both of Boise, Idaho to undertake exploration drilling activities at NDR and H1SMC for the 2019 and 2022 exploration programs respectively. Both the HA and BC geologists completed all exploration drilling activities under the supervision of the Itafos senior geologist. Under the guidance of Conda, HA and BC prepared a series of Standard of Practice (SOP) documents that covered all activities on site including the following:

- SOP-1: RC drilling, logging, and sampling at drill
- SOP-2: Core drilling, logging, and sampling at drill
- SOP-3: Dry Valley core logging and sampling
- SOP-4: Gamma logging operation
- SOP-5: Sample processing
- SOP-6: Chain of custody documentation

The purpose of the SOPs was to establish uniform methodology for the activity and to be a technical resource for any personnel undertaking drilling and sampling at Conda. WSP reviewed the SOPs in place and determined that they conformed with industry best practice as outlined in the CIM Exploration Best Practice Guidelines.

Drill hole collar location maps for the Conda projects are presented in Figure 10.1 through Figure 10.3 , while representative sections for each of the Conda projects are presented in Figure 10.4 through Figure 10.7. A summary table of drilling by project is presented in Table 10.1.

The RC holes were drilled using both wheeled and track mounted RC drill rigs. Except for a small number of drill holes where a hammer bit was used, most of the RC holes were drilled using a 4.25 to 5.83-inch tri-cone bit. RC chips were recovered from the cyclone on the drill rig and were visually logged for lithology type. Typically, cuttings were recovered for every 2-foot downhole interval although in some cases, 6-foot intervals were used. A small representative sample of the chips was stored in chip trays for each 2-foot downhole interval. A sample split was taken from the RC cuttings for sample preparation in advance of submitting to the laboratory for grade analysis (see Item 11.0 for a discussion of sample preparation and assay procedures.)

Core holes at the Conda projects are either drilled to HQ size (outer hole diameter of 4.5 inches and core diameter of 2.5 inches) or PQ size (outer hole diameter of 5.5 inches and core diameter of 3.4 inches). Core drilling utilized a split-tube core barrel within an outer core barrel with a diamond impregnated core bit attached to the end. A typical core run was 5-feet. Core was visually logged at the drill as it was retrieved. The core rig geologist recorded property descriptions and photos of the core via electronic tablet. Properties recorded included core recovery percentage, rock quality designation (RQD), geology, weathering, bedding, aperture, hardness, jointing, fracturing, and any other notable characteristics of the rock core sample in accordance with the methods in the Core Drilling and Logging SOP-2. The core was then transported to the Dry Valley shop facility where it was logged in further detail, photographed and sampled according to the SOP-3.

Table 10.1: Drilling Data Summary by Conda Project

Project	Total Drill Holes	Drill Holes with Available Data				
		Collar Surveys	Downhole Surveys	Downhole Lithology Records	Raw Assay Data	Geophysical Wireline Logs
RVM	210	210	0	210	198	210
NDR	292	292	29	290	239	288
H1SMC	370	370	68	370	320	301

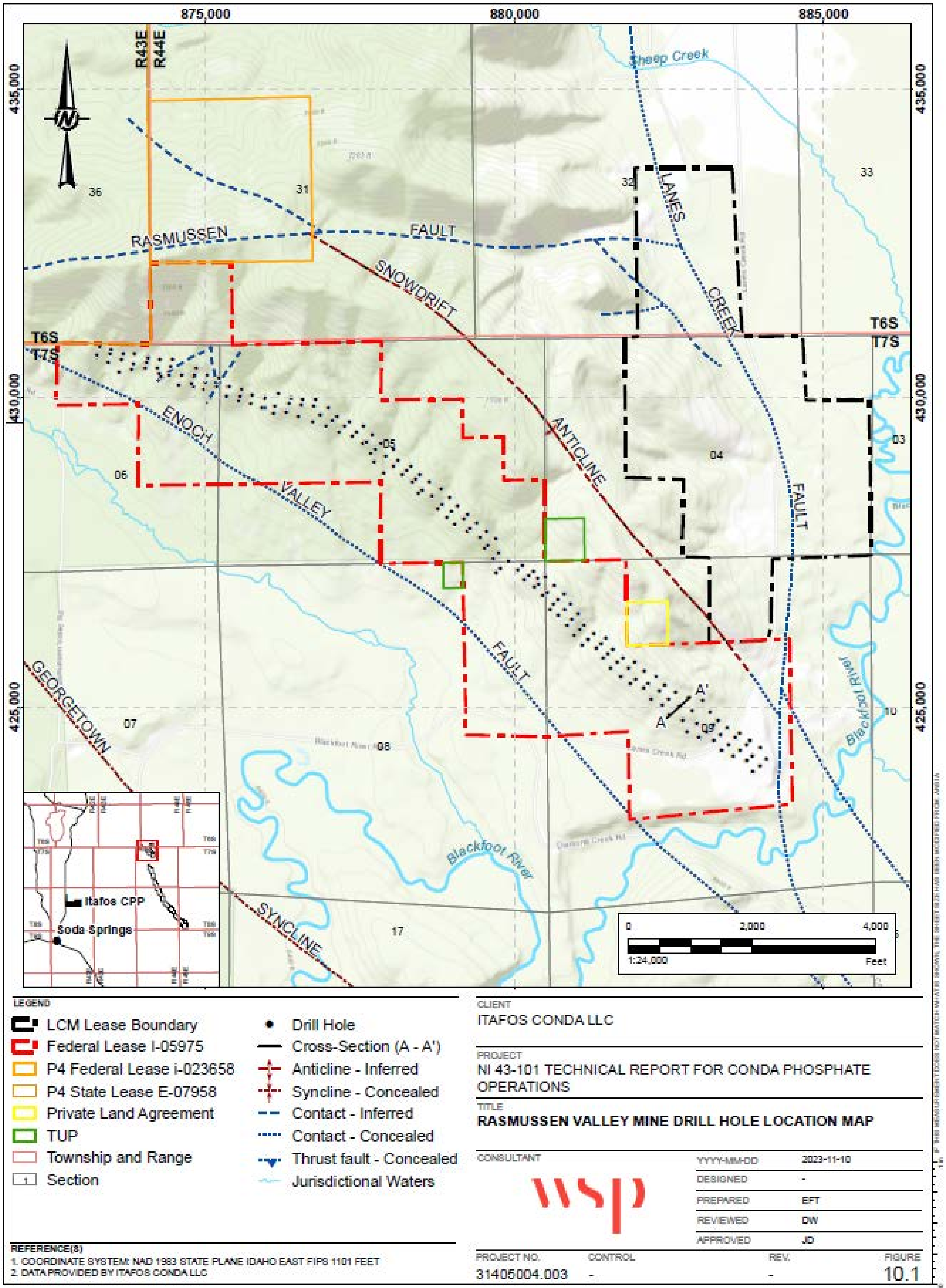


Figure 10.1: Rasmussen Valley Mine Drill Hole Location Map

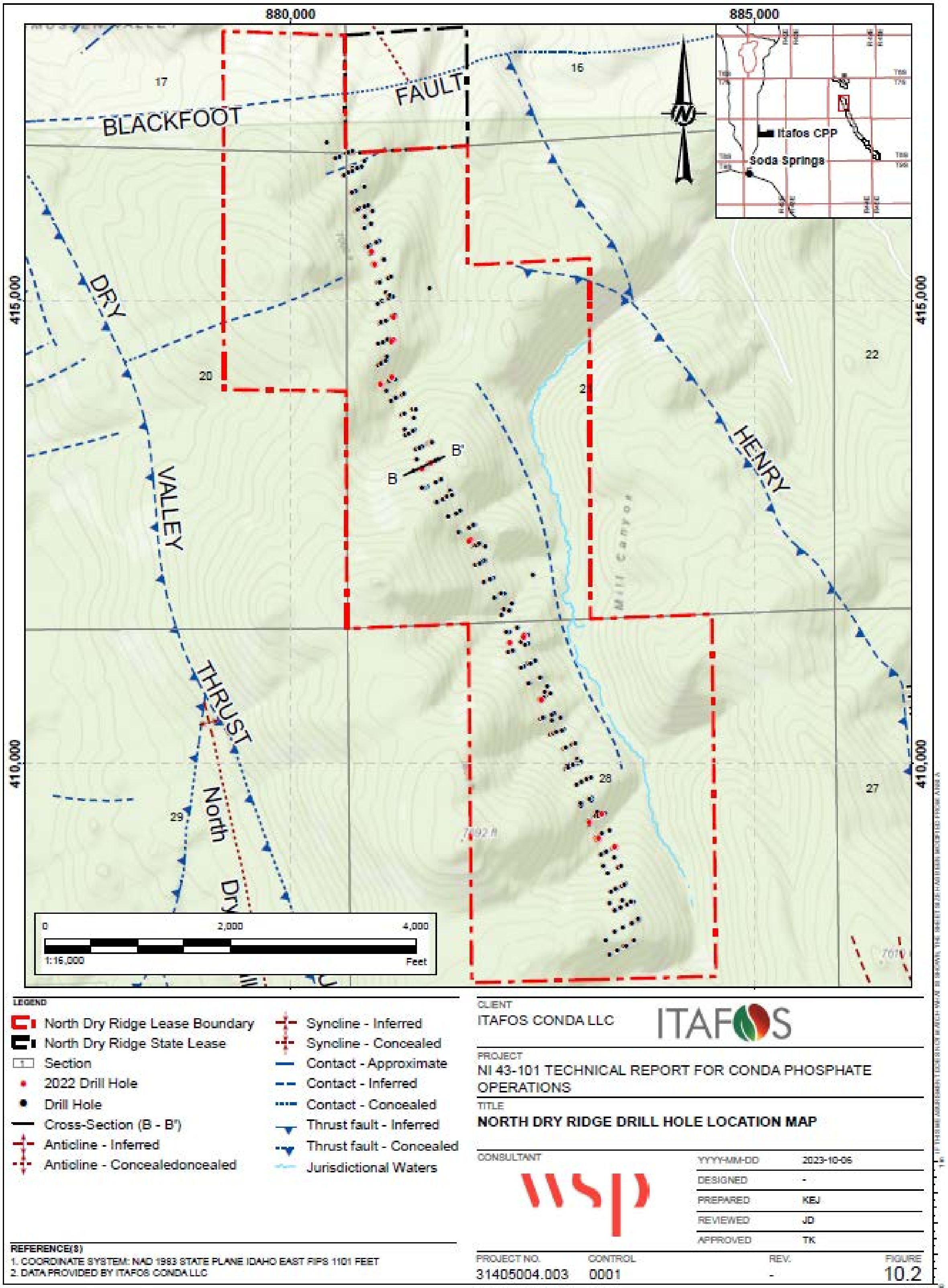


Figure 10.2: North Dry Ridge Drill Hole Location Map

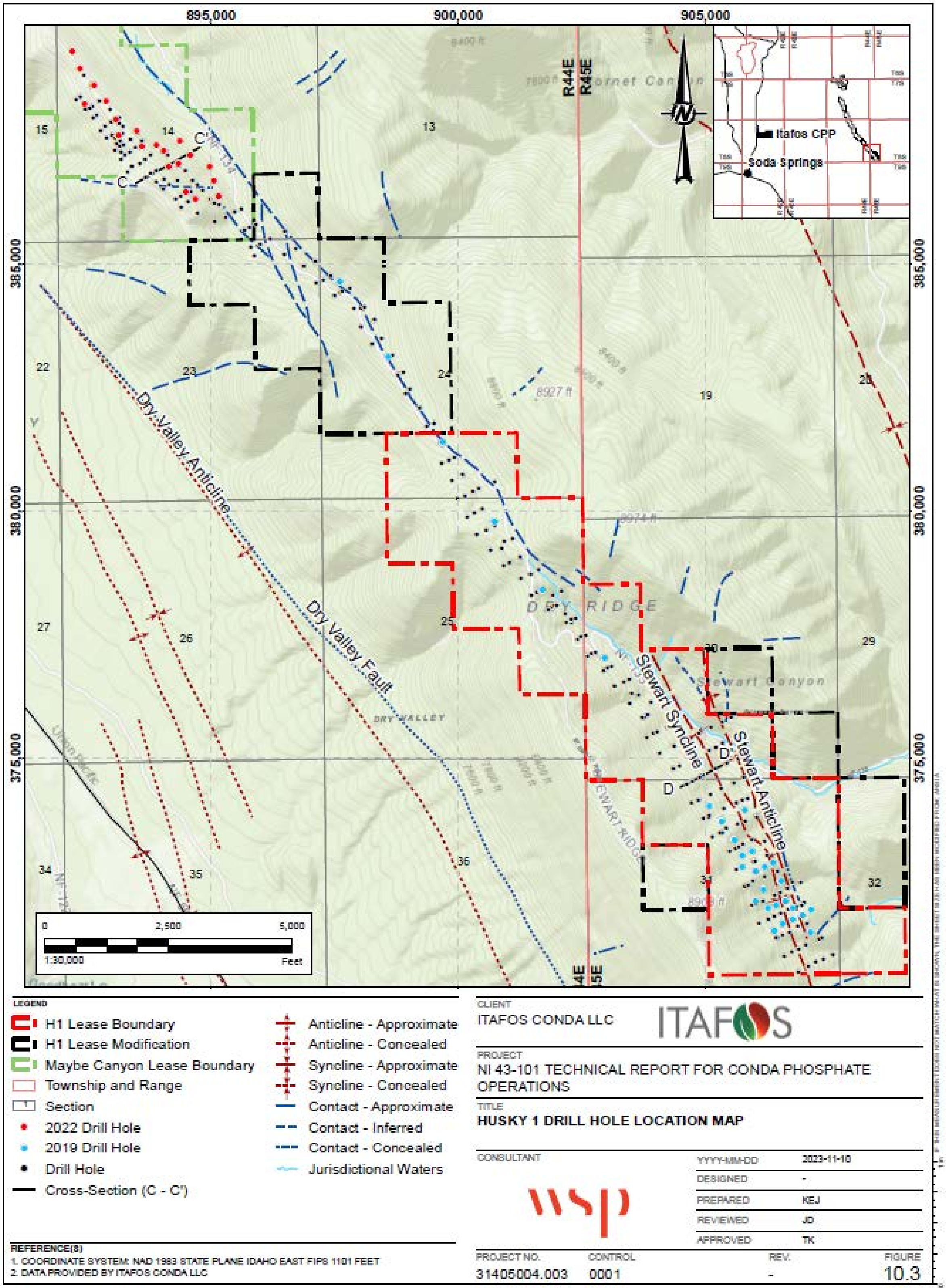
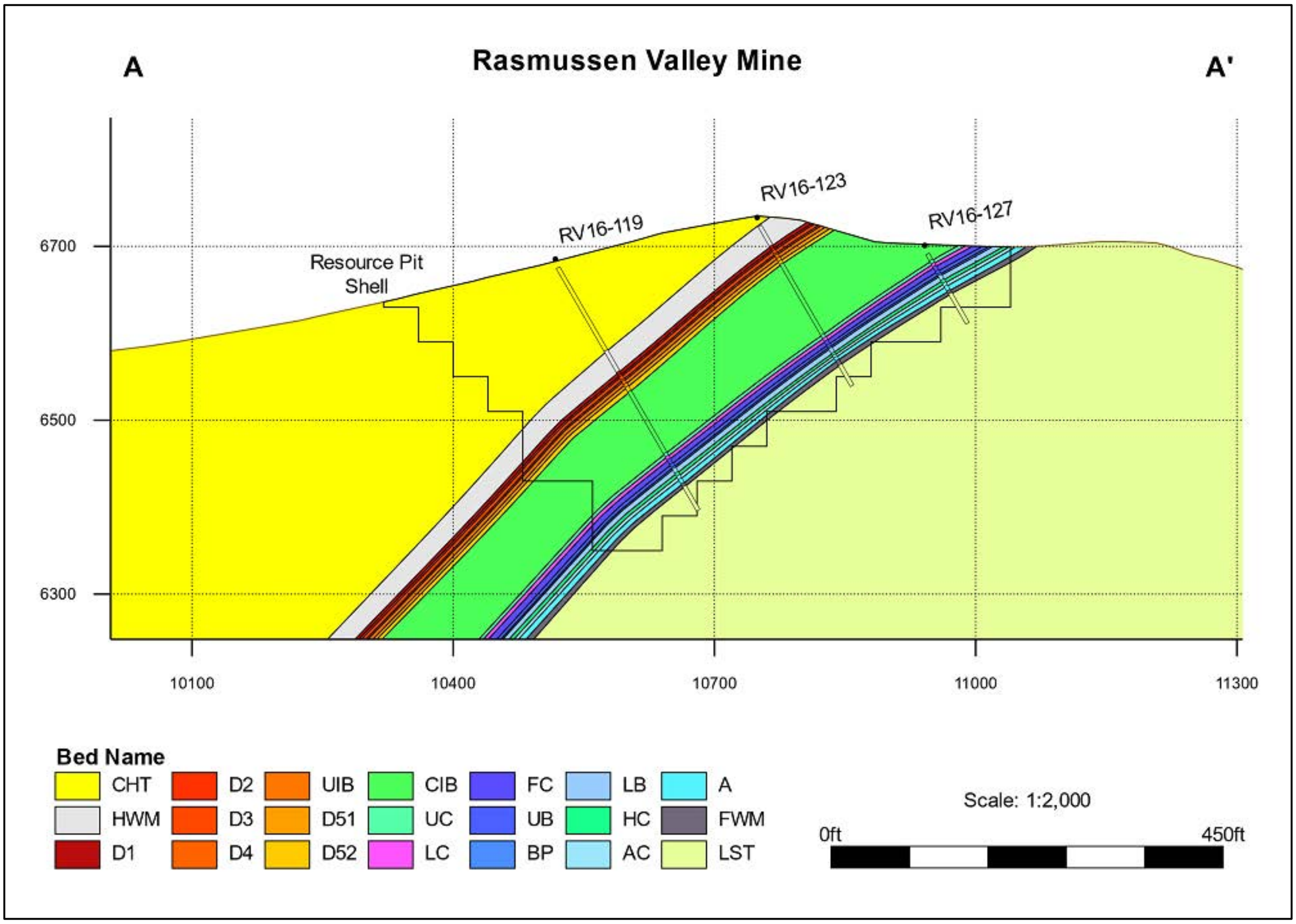
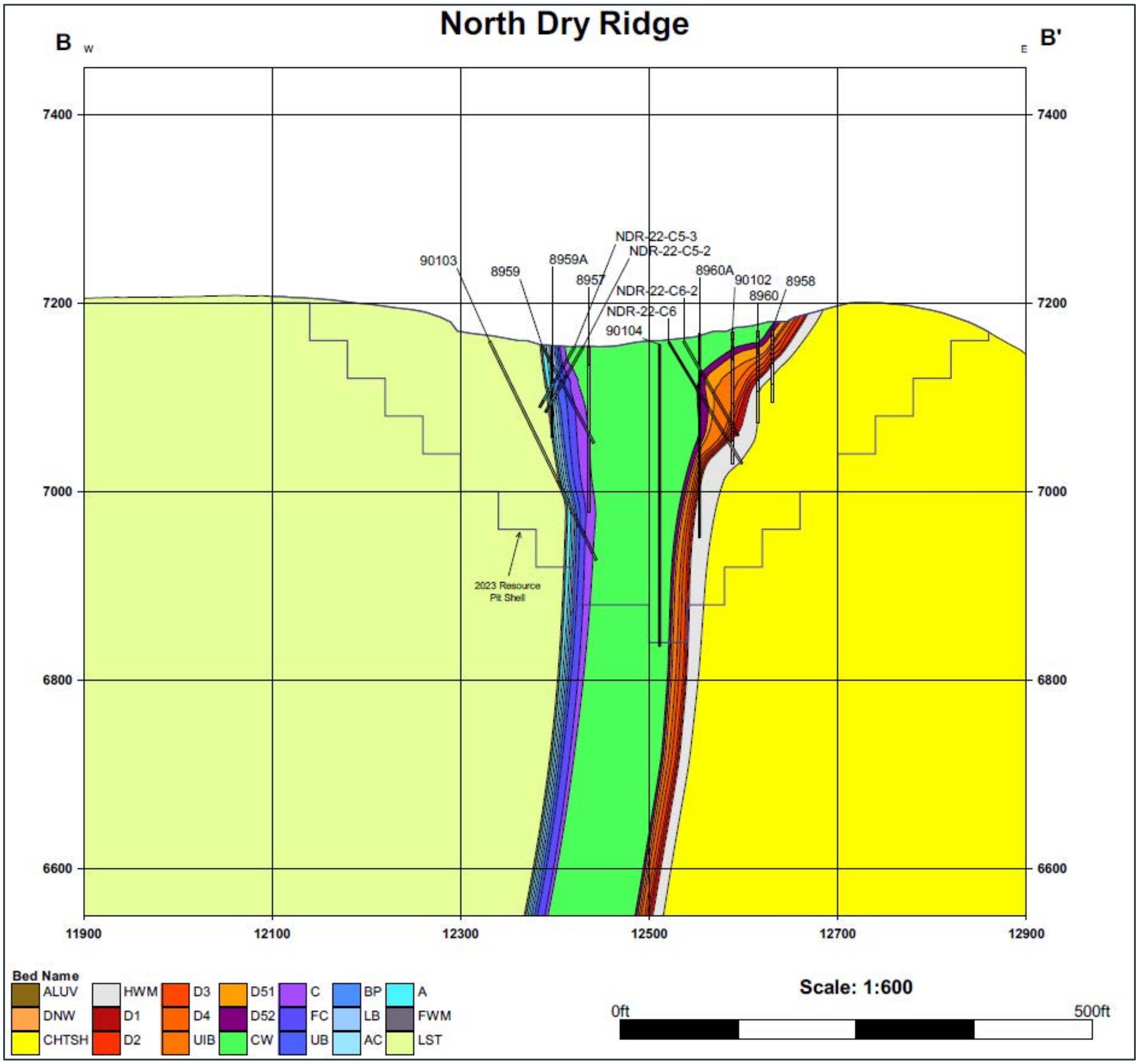


Figure 10.3: Husky1 and South Maybe Canyon Drill Hole Location Map



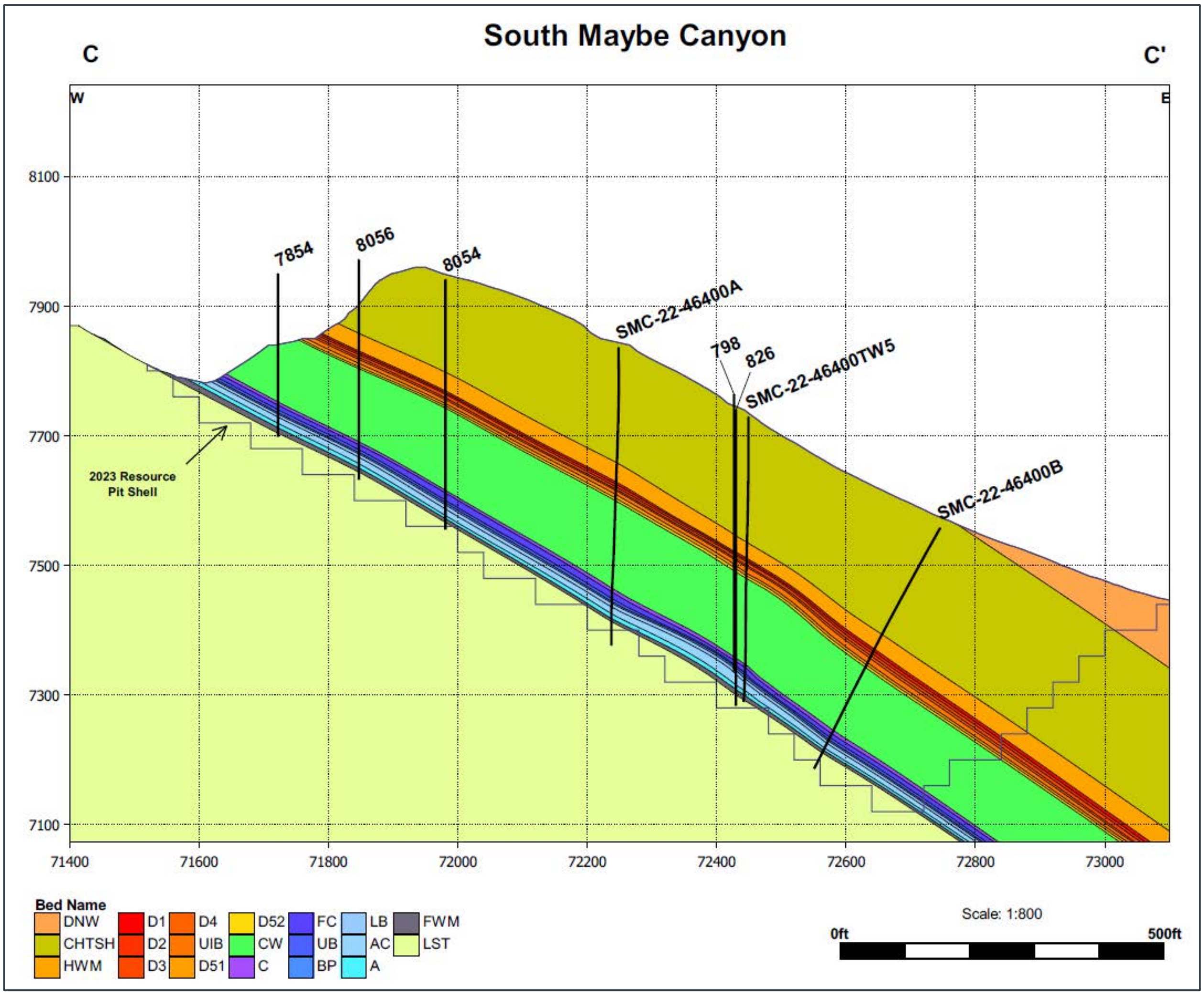
Note: (A-A') as shown on Figure 10.1.

Figure 10.4: Rasmussen Valley Mine Representative Cross Section



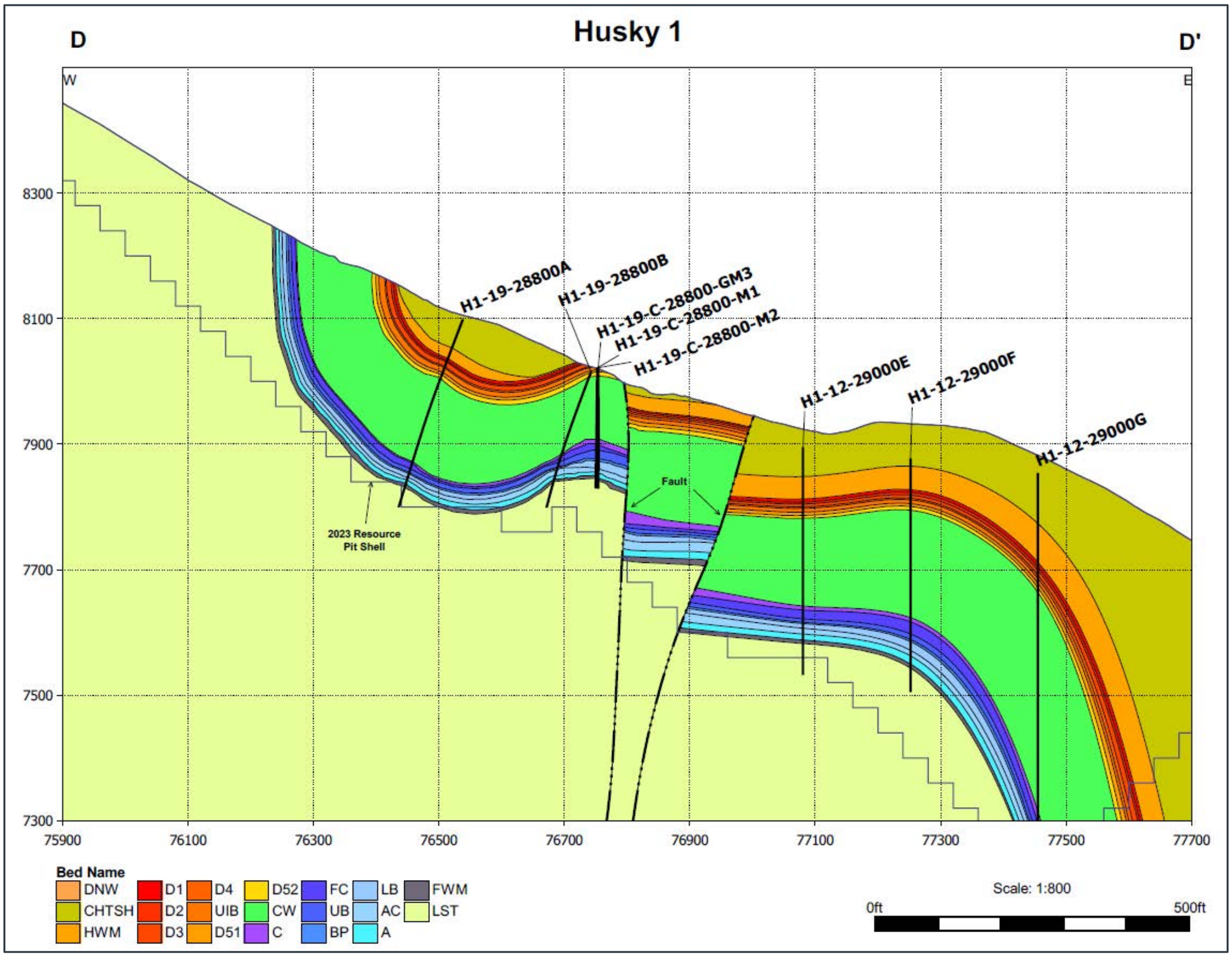
Note: (B-B') as shown on Figure 10.2.

Figure 10.5: North Dry Ridge Representative Cross Section



Note: (C-C') as shown on Figure 10.3.

Figure 10.6: South Maybe Canyon Representative Cross Section



Note: (D-D') as shown on Figure 10.3.

Figure 10.7: Husky1 Representative Cross Section

Although details may vary by project and by drilling campaign, general procedures for drilling on the Conda projects include the following:

- Site preparation.
- RC or core drilling by an independent drilling contractor.
- Tracking core depths and intervals.
- Determining core recovery (core holes only).
- Measuring the Rock Quality Determination (RQD; core holes only).
- Drill site RC chips or core photographs.
- Describing the RC chips or core, logging chips or core.
- Transferring the chips to chip trays or core to the core box.
- Labeling RC chip trays or core boxes and sleeves.
- Transporting RC chip trays or core boxes from the drill site to the core warehouse.
- Preparing the daily field report.
- Calling the hole for completion.
- Hole abandonment or piezometer installation in isolated instances where exploration drill holes have been converted for use as water level monitoring wells.

Additional drilling related tasks included:

- Collecting gamma ray geophysical logs.
- Surveying drill hole collars
- Downhole positional surveying (no downhole surveys were conducted prior to 2019).
- Sampling RC chips or drill core.
- Archiving RC chips or core in the Wooley Valley Shop.

10.2 Impacts of Drilling on the Accuracy and Reliability of the Results

This Item discusses drilling, sampling, and recovery factors that could materially impact the accuracy and reliability of the results for the Conda projects.

There are several potential drilling related impacts on the accuracy and reliability of the Conda projects data, relating to the following:

- Local reliance on older or third-party drilling.
- Absence of downhole positional surveys from pre-2019 drilling campaigns.
- Factors relating to sample recovery from RC drilling.

Portions of the NDR and H1SMC projects rely on older drilling and or drilling performed on behalf of third parties, where the documentation of methods and results is not as robust as during more recent drilling programs. Areas impacted by this include the use of 231 drill holes from the 1989 and 1990 drilling campaigns on NDR and 66 drill holes from the SMC area that were drilled by Beker in 1976 through 1989 and provided to Conda.

The complete absence of downhole deviation surveys for all drill holes prior to 2019 for the Conda projects leads to uncertainty in the actual positioning of samples in 3-dimensional (3D) space. All pre-2019 drill holes are currently modeled as either vertical (-90-degree (°) plunge along the length of the drill hole) or at a fixed inclination based on measured collar dip (again, applied to the entire length of the drill hole). WSP reviewed the 2019 and 2022 deviation data and found that while deviation is generally within an acceptable range, however, as expected with steeply dipping stratigraphic deposits such as NDR and H1SMC there is variability in both the ultimate dip and azimuth of the drill hole.

Given the steep to nearly vertical dips of the beds through most of the Conda projects, small deviations in the xy positioning of the drill hole intervals and associated samples can have significant impacts on the geometry and distribution of the units in the model. During the modeling process, Itafos and WSP identified some localized structural anomalies that are interpreted to be a result of interval/sample positioning in the un-deviated drill holes; however, to avoid adding interpretive bias, Itafos and WSP have honored the un-deviated data and has not made any adjustments to the interval and sample positioning. It is recommended that all future drilling on the deposits continue to include surveying for downhole deviation in order to allow for a quantitative assessment of the impacts on downhole deviation on the modeling.

The models for the Conda projects are also impacted by the intercept angles between the drill holes and the bed roof and floor contacts. The stratigraphy is steeply dipping to subvertical across much of the strike length of the Conda projects; however, due to topography and drill planning decisions, a significant portion of the drilling, especially during earlier drilling campaigns, was conducted from the top of the ridge and drilled as vertical or subvertical drill holes. Later drilling programs included inclined drilling at angles of between 88 to 42 degrees from horizontal.

The vertical to subvertical nature of both drilling and stratigraphy result in a lot of the intercepts being an apparent thickness rather than approximating true thickness, with some of the drill holes appearing to drill down dip (at very low angles to the bed roof and floor contacts) resulting in very long downhole intercepts for some beds. Although the inclusion of inclined holes has improved intercept angles in general, many of the inclined drill holes still result in apparent thickness intercepts due to the dip of the stratigraphy.

This relationship between drilling and bedding intercept angles can further compound the issues relating to lack of downhole deviation surveys discussed above. As the drill hole advances, the drill string will often follow the path of least resistance and in the Qualified Persons professional experience, can often be observed deflecting or deviating towards the down-dip direction when downhole deviation data is available for drilling that intercepts bedding at low intercept angles. WSP believes that the lack of downhole surveying does reduce the confidence in the data; however, further study is necessary to fully understand the significance and impact.

Downhole deviation data from any future drilling programs on Conda projects should be evaluated to further understand the impacts of the relationships between drilling and bedding contact intercept angles. Depending on the outcomes, it may be necessary to consider means for improving the drilling intercept angles, including longer standoff distances to allow for shallower drill hole plunges (at the expense of much longer drill holes), or mechanical means such as directional drilling or wedging to improve the intercept angles.

Uncertainty also exists for the Conda drill holes between the potential effects of RC drilling on the grade analyses. Various Conda personnel speculate that the loss of non-phosphatic fines during the RC drilling process has resulted in a slightly improved or partially washed sample compared to the actual in-situ grade values. WSP performed a high-level review by evaluating the P_2O_5 head grade from the RC and core drill holes completed in 2019 and 2022. WSP determined that there was a minor difference between the core and RC drilling on the overall P_2O_5 grade, with a slightly higher grade in the core observed in H1SMC and lower in NDR. Given the small number of core drill holes within the larger RC data set, it was decided that the overall effect of the difference would be relatively minor.

10.3 Relationship Between Drill Intercept Angles and Bed Contacts

The combination of vertical and steeply inclined drill holes targeting subvertical to steeply dipping stratigraphy has resulted in apparent thickness intercepts for most of the Conda drill holes in both NDR and H1SMC projects. Uncertainty of drilling and bedding intercept angles is further compounded by the absence of downhole deviation surveys for the pre-2019 Conda drill holes. Review of the 2019 and 2022 deviation surveys indicate that there is some variability in the azimuth for the inclined drill holes, but the overall mean absolute difference was low at 2.2°, with a maximum of 22.9°. The mean absolute dip variability for all surveyed drill holes was 1.7° with a maximum of 6.0°. These results indicate that there is likely some variability in the spatial position of the drill intercepts for the pre-2019 drilling, however, the effect on the overall model will be hard to determine. WSP and Itafos have worked to improve the structural model in areas of concern.

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Sample Preparation

Although no formal documentation of Conda projects sampling, analyses, and sample security (chain of custody) procedures were available for the pre-2019 drilling, HA, BC and Itafos have developed SOPs for the 2019 and 2022 drilling programs, as discussed in Item 10 of this TR. WSP reviewed the sampling and analyses procedures with Conda and exploration contractor senior personnel during the QP site visits in April 2019, September 2019 and September 2022, and is in general agreement that the sampling and analytical procedures are completed to industry standards based on the procedures discussed and observed. Review of the recently developed SOPs indicate that the procedures are consistent with CIM best practice guidelines. It is the WSP QP's opinion that the analytical results provided for the NDR and H1SMC projects are consistent with sampling and analyses via the described methods.

As core drilling at the Conda projects was generally limited to a small number of holes for purposes other than exploration and resource delineation, the discussion of sampling, analyses, and chain of custody for the Conda projects focuses on the RC drill hole samples.

Although details may vary by projects and by drilling campaign, general procedures for sampling from RC drill holes on the Conda projects included the following:

- Upon completion of the drill hole the wireline gamma logs were run and processed. The logs were then plotted, and bed picks and bed correlations were performed by the exploration contractor senior geologists. The bed picks and correlations were then reviewed and finalized by the senior Conda geologist.
- The gamma log picks were then used to prepare the sampling list, which identified the sample intervals for the individual beds from the UPZ and LPZ for each drill hole.
- RC sample lengths varied between projects and across drilling campaigns but were typically 2 feet for RVM, LCM, H1SMC, and 2022 NDR drilling and 5 feet for historical NDR drilling.
- Given the nature of sample recovery from RC drilling, the samples could not be split out by bed contacts.
- To confirm that the target beds were captured in the sampling as well as to provide grade data for dilution material for future mining studies, the following sampling rules were applied:
  - Sampling for the UPZ must begin at least 10 feet above and continue at least 10 feet below the UPZ.
  - Sampling for the LPZ must begin at least 10 feet above and continue at least 10 feet below the LPZ.
- The RC cuttings sample bags were then selected and transferred to the sample preparation area.

Sample preparation procedures for the samples from RC drill holes for the Conda projects included the following:

- Sample bags were opened, and RC cuttings were placed on a drying tray, one sample per tray, and placed on shelves under heat lamps in the drying cabinets. Samples were dried between 500- and 550-degrees Fahrenheit for 24 hours.
- The dried sample was then run through a jaw crusher.
- The crushed sample was then split using a riffle splitter. One split was used to prepare the analytical pulp while the other split was retained for reference.

- The analytical split from the riffle splitter was then pulverized. The resulting pulp sample was then packaged for analyses.
- The analytical samples were transported to the CPP laboratory for analysis.
- Once analyzed, the remaining pulp were boxed by drill hole and stored at the secure Wooley Valley storage facility.
- Quality assurance and quality control (QA/QC) samples were inserted systemically into the sample stream as outlined in Item 11.2.

Sample shipping and analyses procedures for the samples from RC drill holes for the Conda projects included the following:

- All samples collected for grade analyses were submitted to the CPP onsite laboratory.
- Primary analyses at CPP laboratory included the following:
  - Major oxides and select trace elements using ICP-OES.
  - Analytical packages varied by project and exploration year, with the following oxides and elements available by project:
    - RVM: P_2O_5, Al_2O_3, MgO, Fe_2O_3, CaO, Cd, Cr, Cu, S, K, Ni, Si, Ti, V, Y, Zn
    - NDR: P_2O_5, Al_2O_3, MgO
    - H1SMC: P_2O_5, Al_2O_3, MgO, Fe_2O_3, CaO, Cd, Cr, Cu, S, K, Ni, Si, Ti, V, Y, Zn:
      - Analysis for the samples for the historical SMCM included in the H1 model were limited to P_2O_5, MgO and LOI.
- CPP laboratory internal QA/QC on exploration samples included MIST 694 P_2O_5 Standard (30.2% P_2O_5) for ICP-OES calibration and WPO 43 Standard (31.7% P_2O_5) for internal checks. Lab duplicates were run approximately every 20 samples.
- During several programs, pulp rejects from a selection of samples providing spatial distribution coverage as well as coverage across the grade ranges reported from the CPP results were sent to a secondary external laboratory for check assay purposes as part of the analytical QA/QC program.
- The CPP laboratory provided the data in tabular format to Conda geology personnel. A printed copy of the tabular laboratory results is stored in binders in the CPP technical library.
- Formal laboratory certificates are not prepared by the CPP laboratory.

The QP feels that the QA/QC procedures in place relevant to sampling the core are adequate to provide confidence in the data collection and processing. These QA/QC controls include:

- Project geologist review of all sample markups prior to sampling.
- Core photographs that include sample markups prior to sampling.

The Conda exploration sampling procedures were modified during the 2019 metallurgical drilling program to ensure appropriate sampling and analytical QA/QC controls were introduced to the process. Field blanks, crushed and pulp duplicates, and standard reference material (SRM) samples were inserted at a rate of 3% of the main samples per drill hole.

Overall, the QP feels that the methodologies being used by the Conda geological and exploration teams are within industry standards for sample preparation, quality control employed before dispatch, process of sample splitting and reduction, and security of samples to ensure that validity and integrity of samples is upheld. WSP reviewed these methodologies and procedures while on site.

11.2 QA/QC Sampling Procedures and Results

Conda implemented a QA/QC program for the 2019 RC drilling program. Prior to 2019, no formal QA/QC program was in place at Conda, however, an external check assay was performed on a selection of samples in 2016 using an independent third-party laboratory, SGS Denver (SGS). Additional check assays were submitted to SGS during the 2022 drilling program.

Systematic insertion of QA/QC samples into the sample stream was completed by HA or BC geologists under the supervision of Itafos senior geologist. Samples were inserted at a minimum rate of 3% of the total drill hole samples for both the 2019 and 2022 drilling programs. The following summarizes the QA/QC sample procedures:

- The RC rig geologist generated the sample number for the QA/QC samples by setting aside an empty numbered RC sample bag and entering the sample ID number as a QA/QC sample in the logging software.
- The empty numbered sample bags were provided to the HA or BC geological coordinator to be assigned a QA/QC sample type.
- The HA or BC geological coordinator designated each of the QA/QC sample numbers as either a duplicate sample, blank sample, or SRM sample within each batch of samples sent to the assay lab and wrote the sample type on the sample bag for the sample preparation technicians.
- The QA/QC sample bags were retained until the assay data had been reviewed.

For the core drill holes:

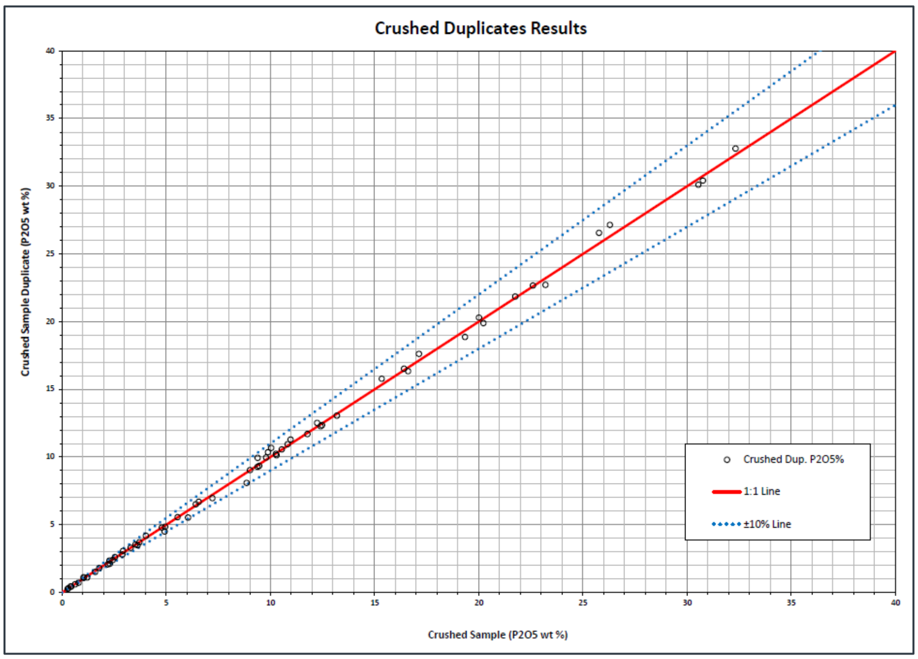
- A minimum of three QA/QC samples were assigned by the HA or BC geologist to each core drill hole prior to the samples being submitted to the CPO laboratory.
- All but one core drill hole had at least one of each QA/QC sample assigned (blind duplicate, blank and SRM).
  - Hole NDR-22-C4 was the first drill hole processed and sampled for the core drilling program and the QA/QC sample assignment process was not finalized until after the samples were submitted for assay.

Table 11.1 summarizes the total QA/QC samples for both programs.

Table 11.1: Summary of 2019 and 2022 QA/QC Samples

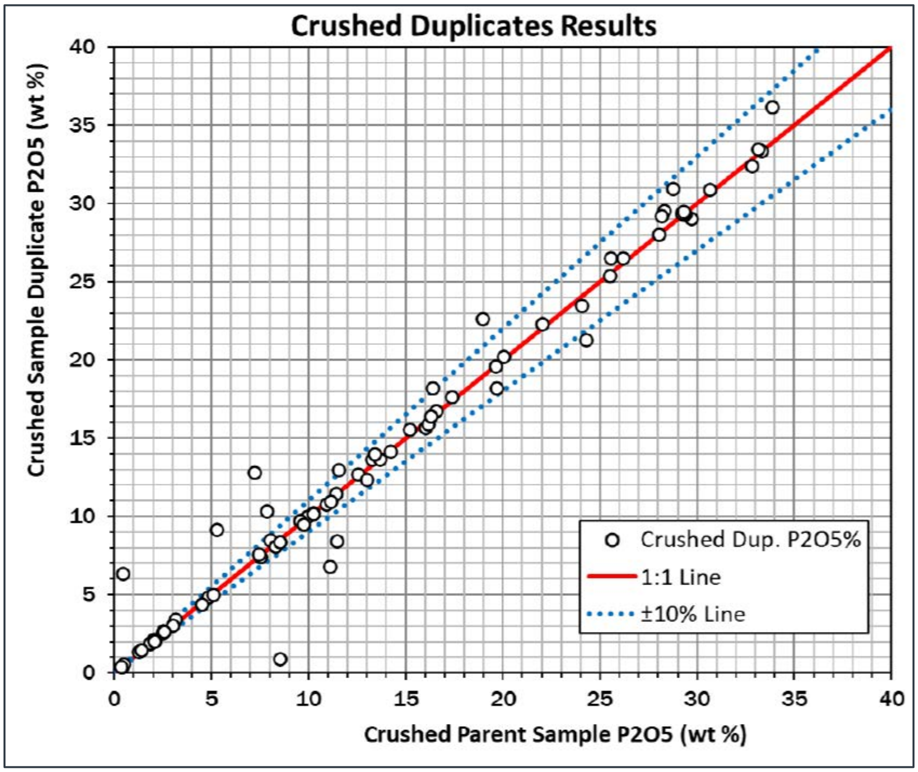
Drill Program	Total No. Samples	Total No. QA/QC Samples	Percentage of QA/QC Samples	QA/QC Sample Type					Check Assay (SGS)
				SRM (AFPC #22)	SRM (NIST #694)	Crush Duplicates	Pulp Duplicates	Limestone Blank	
2019 RC	10,512	303	3%	36	28	64	111	64	-
2022 RC	2,302	296	13%	46	23	88	70	69	115
2022 Core	507	88	17%	15	4	19	31	19	37

Figure 11.1 through Figure 11.12 present a series of QA/QC control charts for the 2019 and 2022 drilling programs.



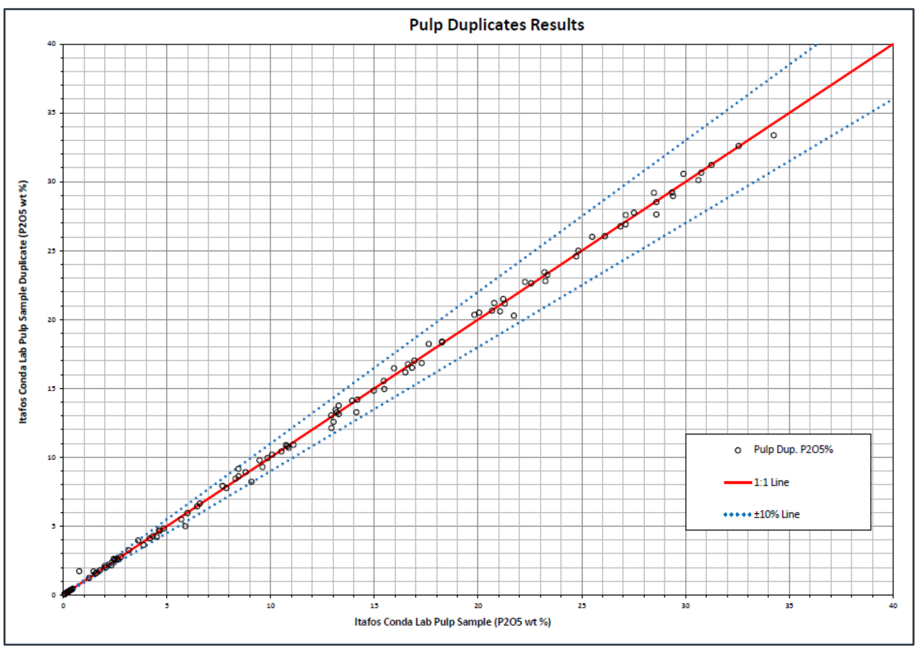
Source: Haley & Aldrich 2020

Figure 11.1: 2019 Crushed Duplicates



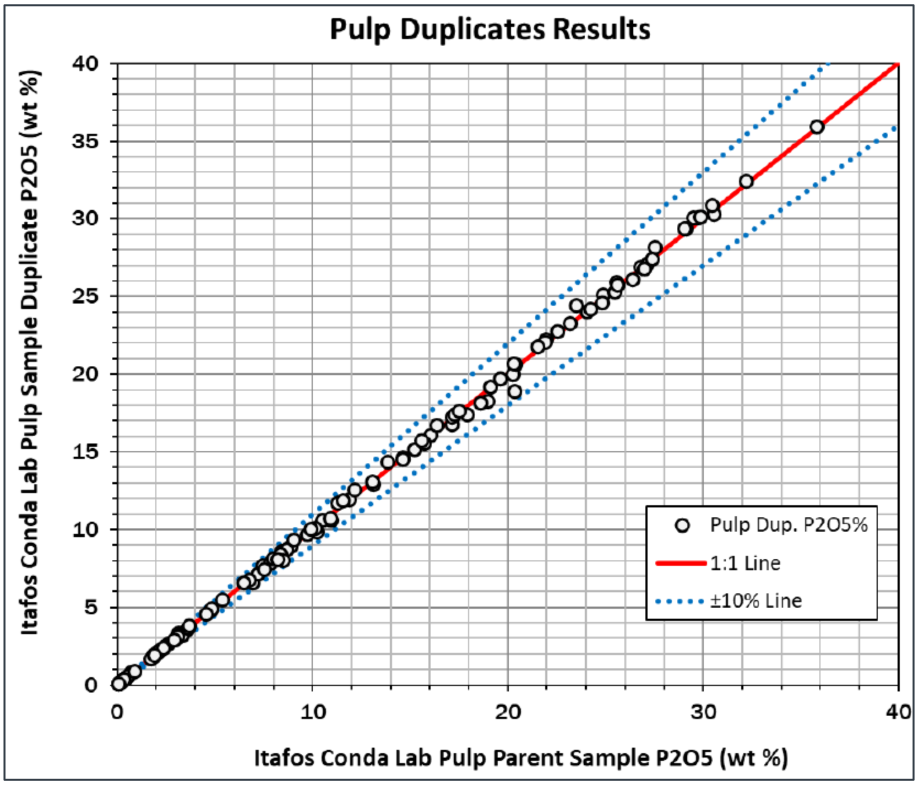
Source: Brown & Caldwell 2023

Figure 11.2: 2022 Crushed Duplicates



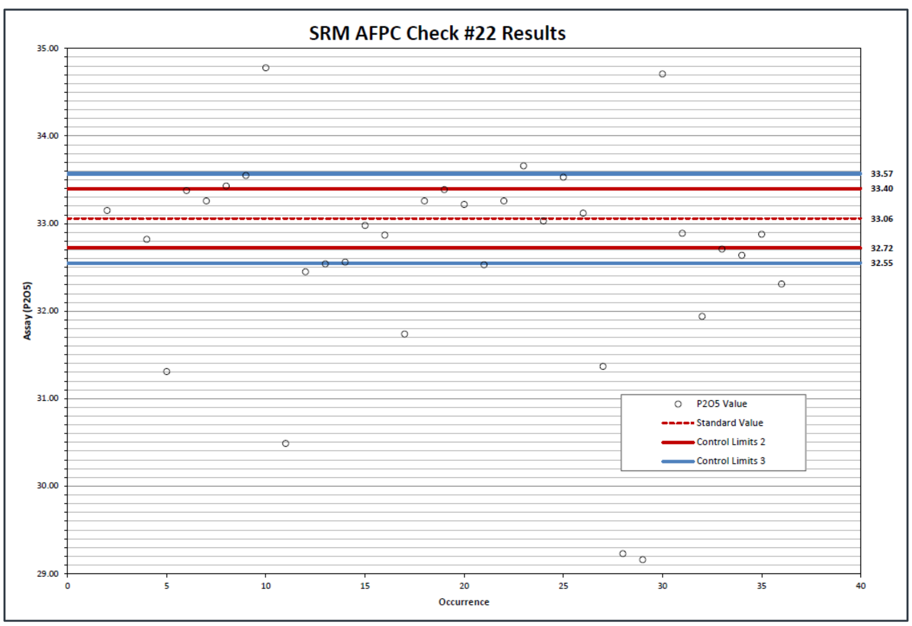
Source: Haley & Aldrich 2020

Figure 11.3: 2019 Pulp Duplicates



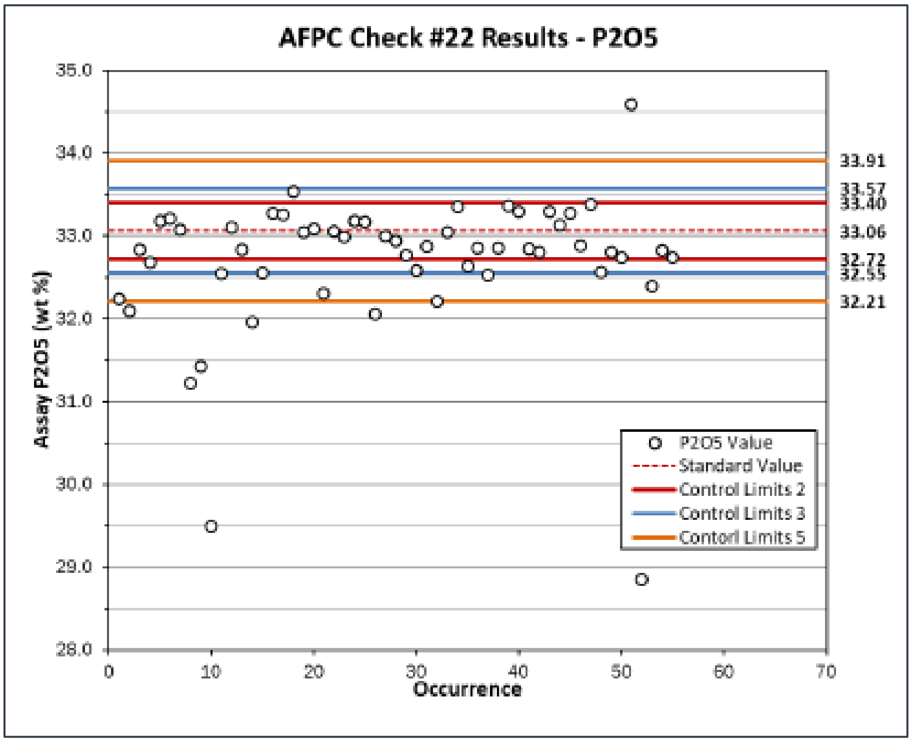
Source: Brown & Caldwell 2023

Figure 11.4: 2022 Pulp Duplicates



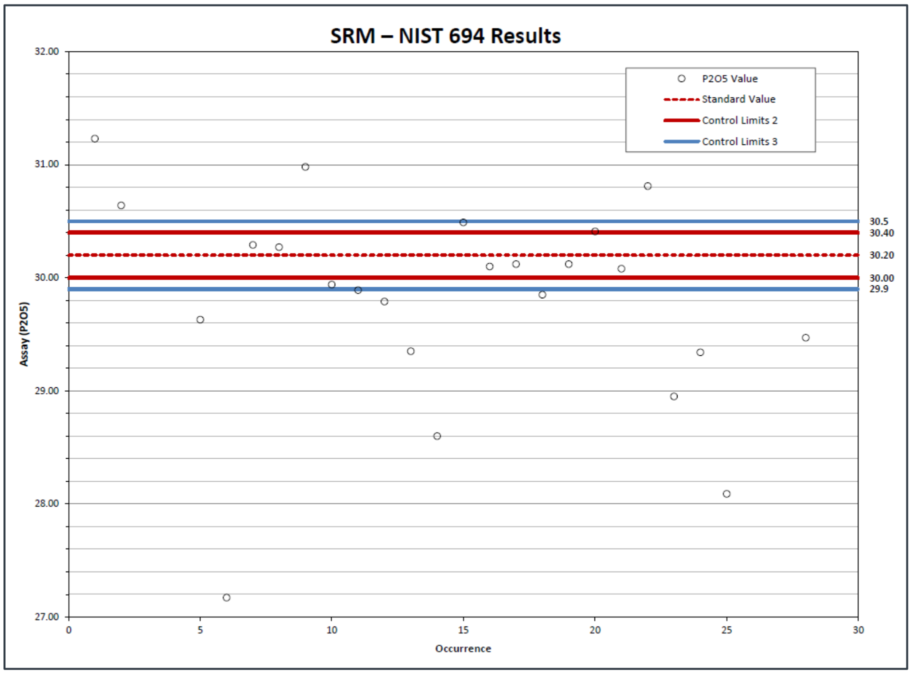
Source: Haley & Aldrich 2020

Figure 11.5: 2019 SRM AFPC #22 Control Chart



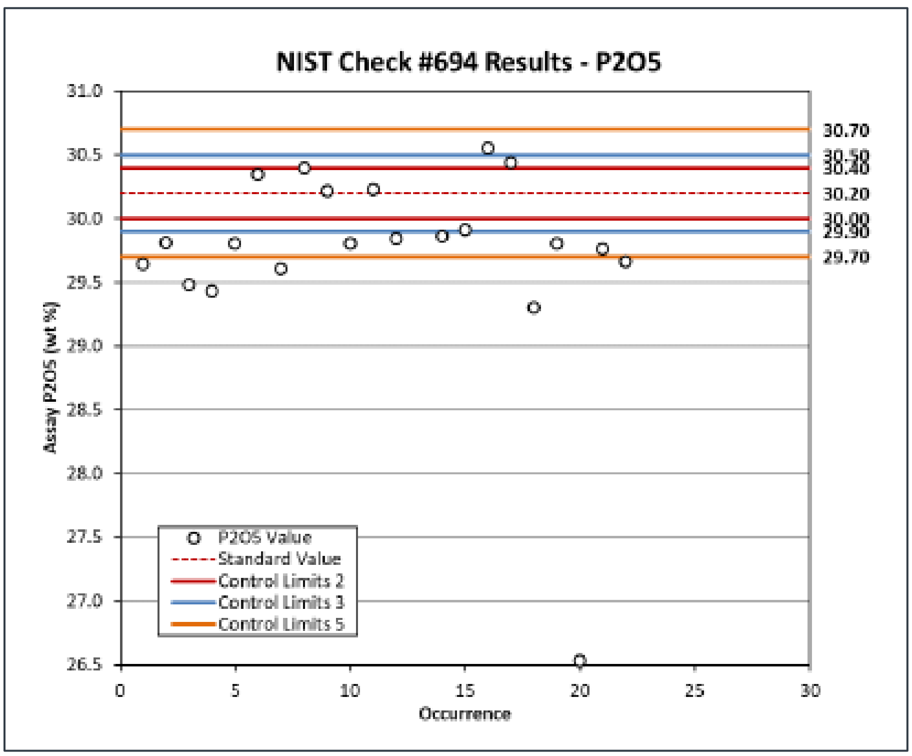
Source: Brown & Caldwell 2023

Figure 11.6: 2022 SRM AFPC #22 Control Chart



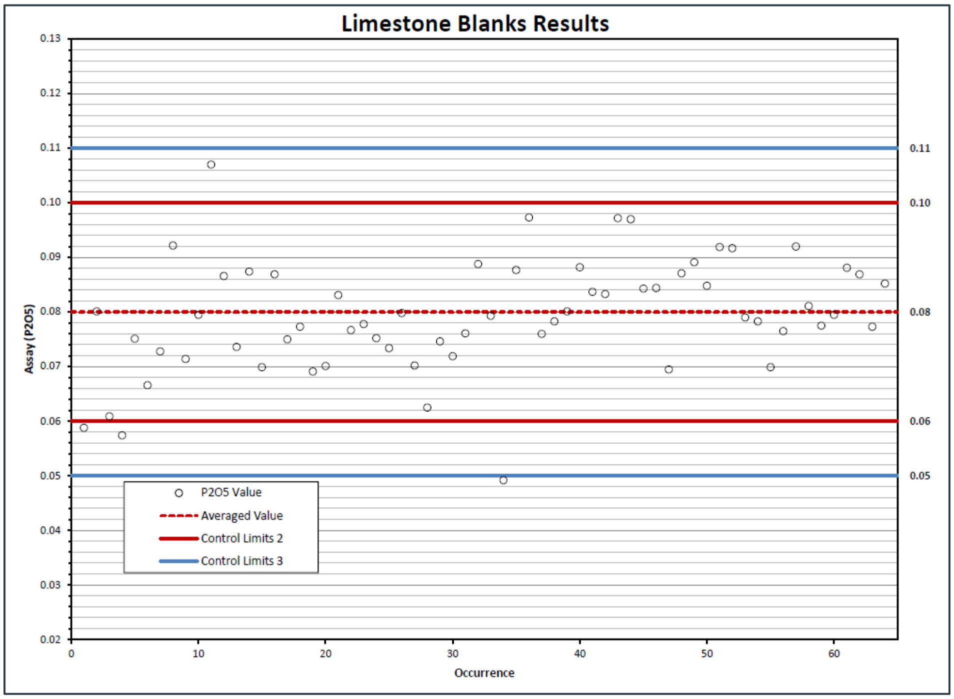
Source: Haley & Aldrich 2020

Figure 11.7: 2019 SRM NIST #694 Control Chart



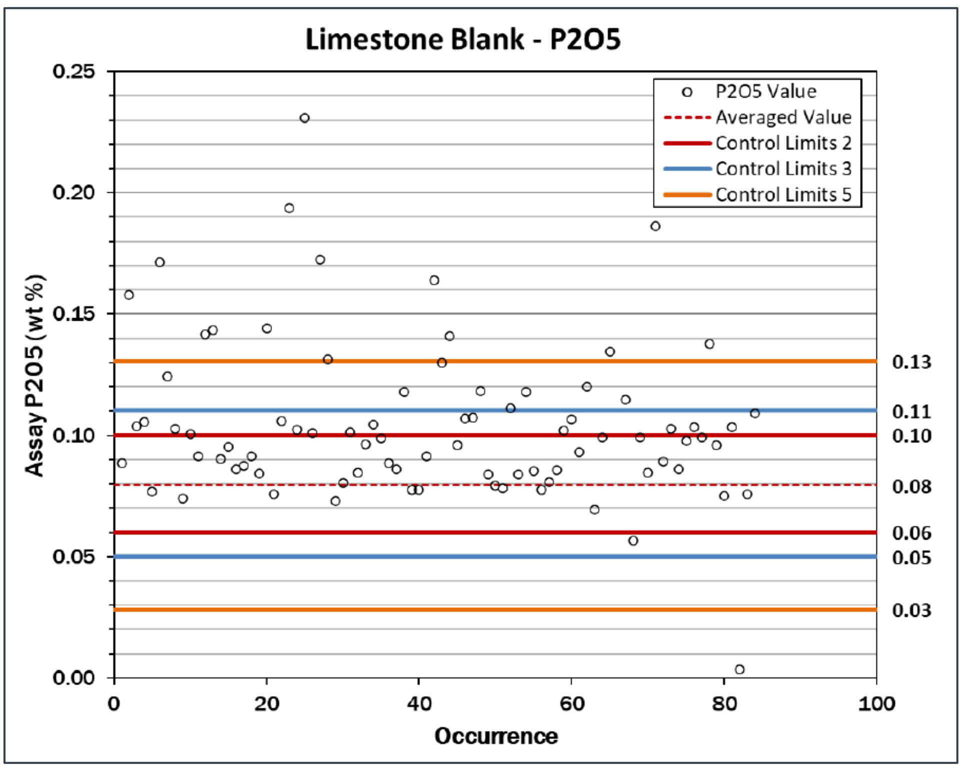
Source: Brown & Caldwell 2023

Figure 11.8: 2022 SRM NIST #694 Control Chart



Source: Haley & Aldrich 2020

Figure 11.9: 2019 Limestone Blank Control Chart

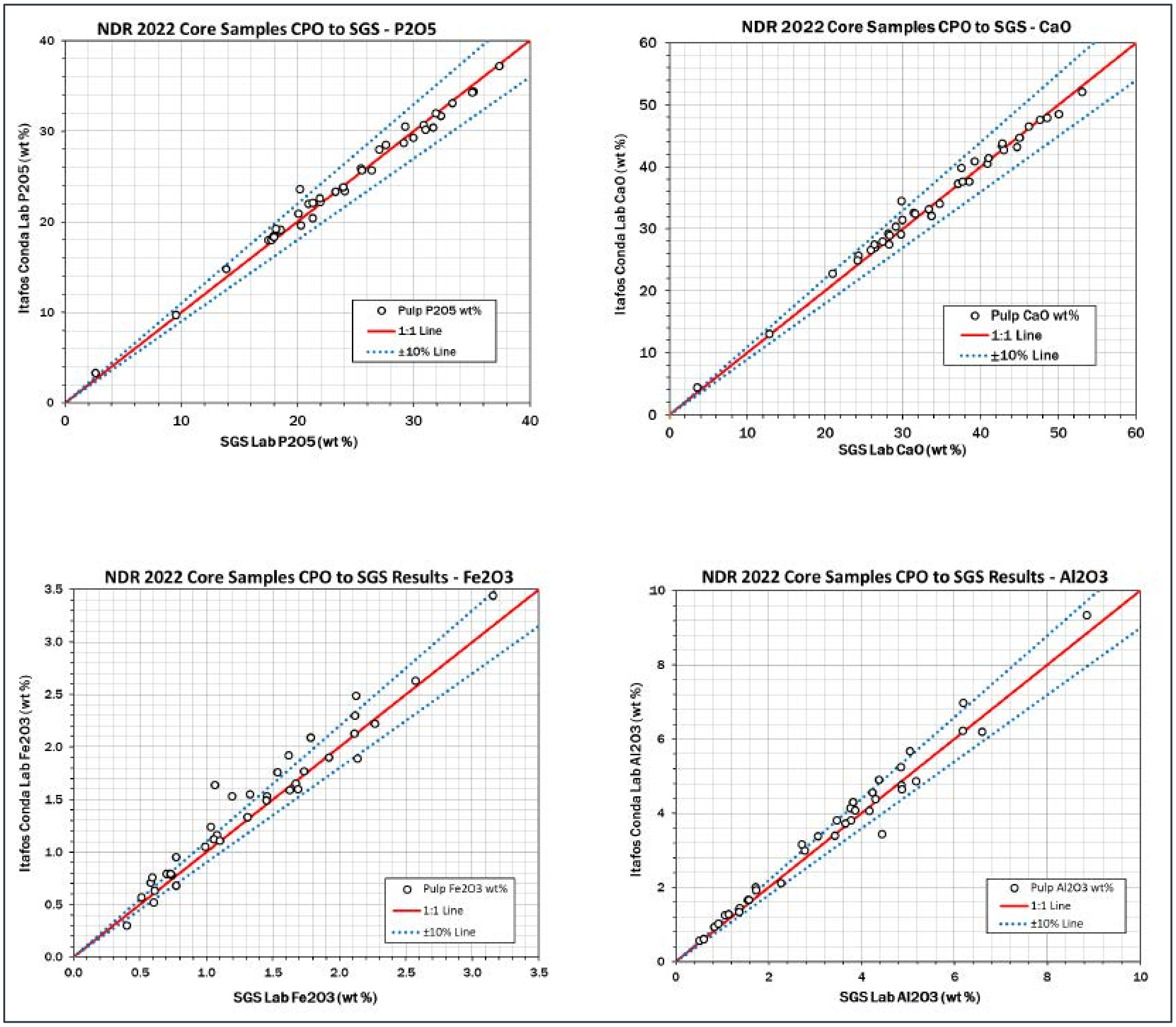


Source: Brown & Caldwell 2023

Figure 11.10: 2022 Limestone Blank Control Chart

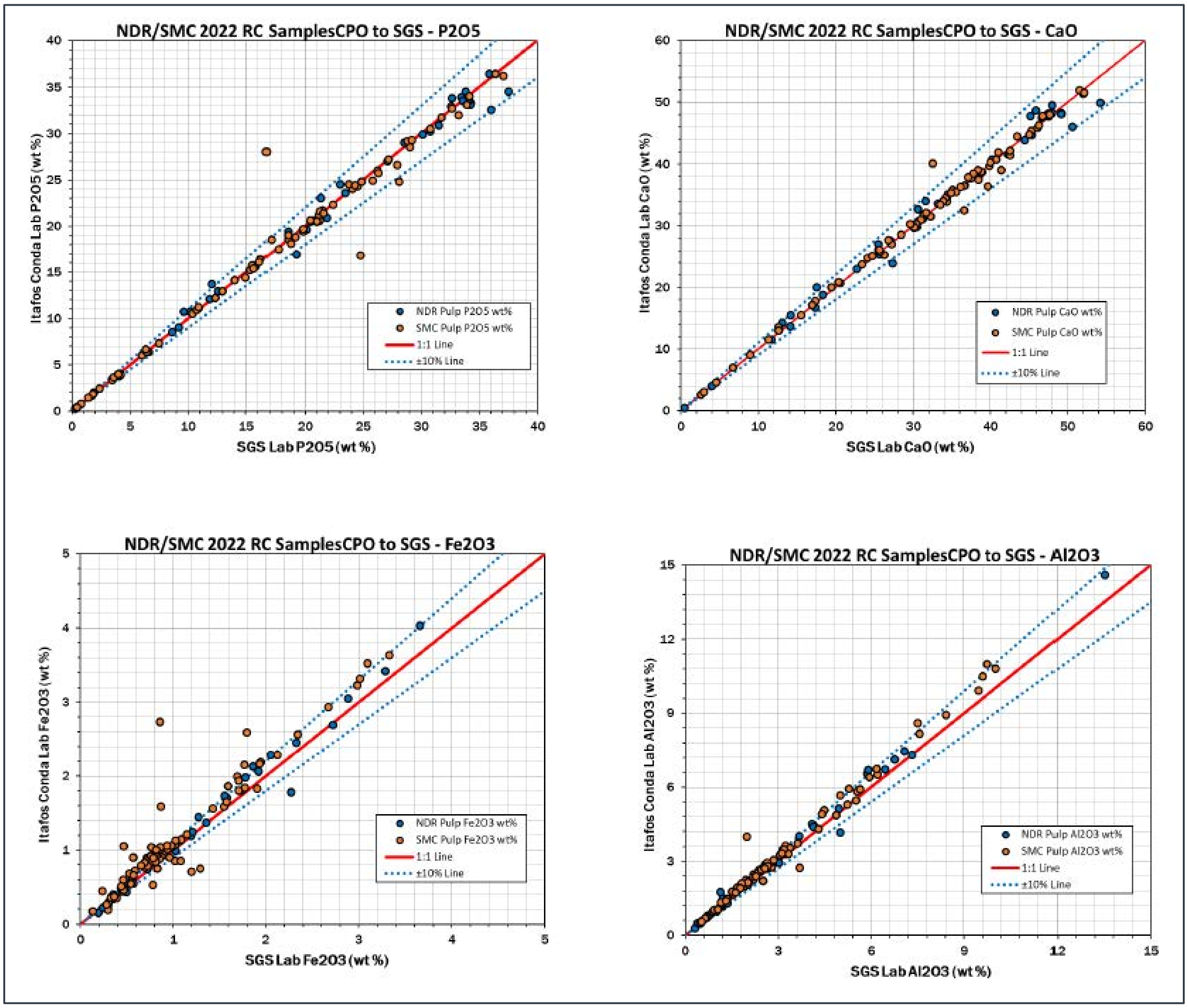
WSP compared the 2019 and 2022 QA/QC results and found that of the three QA/QC samples, the crush and pulp duplicates behaved the best, indicating that there is a good consistency at the Conda laboratory. However, the SRM's and Blanks showed several samples that returned values outside the expected deviation limits. For the SRM's there was definite improvement between the 2019 and 2022 programs, however, there appears to be a low-grade bias between the expected SRM assay values and the laboratory assay values. This may be due to sample handling, processing and analyses procedures that may have introduced contamination into the process, or the possibility of inherent variability in the original SRM material. WSP recommends that additional SRM material be obtained from another source to determine whether the variability is due to the SRM material or the laboratory procedures.

For the blanks, this likely indicates that the testing equipment is not consistently cleaned between samples leading to a degree of contamination. The QP recommends that particular attention be paid to the cleaning of all crushing, processing, sampling, and sorting equipment between samples for all future analysis programs.



Source: Brown & Caldwell 2023

Figure 11.11: 2022 Core Sample SGS Check Assay Control Chart



Source: Brown & Caldwell 2023

Figure 11.12: 2022 RC Sample SGS Check Assay Control Chart

The SGS check assay samples for both the 2022 RC and core drilling showed a high degree of correlation for P_2O_5 samples. Some variability was shown for the other oxides, especially for Fe_2O_3. Given the high degree of correlation for the P_2O_5 samples, the WSP Qualified Person is confident in the results obtained from the CPP Laboratory, and their suitability for Mineral Resource estimation.

11.3 Qualified Person Statement on the Adequacy of Sample Preparation, Security and Analytical Procedures

It is the QP's opinion that the sample preparation, security, and analytical procedures applied by Conda and its predecessors at the Conda projects are appropriate and fit for the purpose of establishing an analytical database for use in grade modeling and estimation of Mineral Resource estimates as summarized in this TR.

Prior to the 2019 TR, Mineral Resources had not been publicly disclosed for the RVM, NDR and H1SMC by Conda and its predecessors, and much of the exploration and resource delineation work performed by Conda was viewed as ongoing internal operations support work rather than being performed with public disclosure in mind. This led to limited formal documentation of procedures, reliance on in-house laboratory analyses, and limited analytical QA/QC programs relative to what is typically observed in public disclosure focused projects.

Formal documentation of procedures was established for the 2019 metallurgical drilling program at H1 and the QP recommends that this continue to be applied across all projects in order to allow for a more consistent basis for future public disclosure. Industry standard QA/QC programs, including at a minimum, regular insertion of field blanks, standards and duplicates as well as laboratory replicates and check assay analyses were incorporated into the H1 metallurgical drilling program and are recommended for all future drilling programs at the Conda projects in order to further improve the confidence in the underlying data and to provide a more complete disclosure of methods and results.

12.0 DATA VERIFICATION

12.1 Mineral Resources

12.1.1 Drill Hole Data Verification

WSP compiled all tabular drill hole and analytical data provided by Itafos into a digital relational database for each of the two deposits; data for the Conda Projects deposits (modelled in Maptek Vulcan™ (Vulcan) and Leapfrog) was compiled first in a MS Access™ database then into a Vulcan ISIS database. For the 2023 modelling, Conda provided the updated drill collar and lithology data via the updated Leapfrog models. The QP then verified each change made and included these updates in the Access database.

The two drill hole databases were then used as the basis for the data verification and data evaluation processes described in the following items. Verified data was exported from these two databases for the purpose of constructing the block models and preparing estimates of Mineral Resource estimates, as described in Item 14.0.

WSP performed a series of routine geological data integrity checks on the drill hole databases for the NDR and H1SMC deposits to check for common errors and omissions in geological data including but not limited to the following:

- Identify duplicate or twinned drill holes with identical collar positions:
  - If any pairs of drill holes were identified from this data validation check, then WSP systematically reviewed the pairs and selected the drill hole with the more accurate or complete geological data to be included in the model.
- Check drill hole collar elevation against topography elevation:
  - With the improved topographic model, an assessment of the drill holes against the topographic surface was completed.
- Check that total hole depths on the collar table match the total depth of the lithological table:
  - If any did not match, WSP reviewed downhole geological data as well as drilling records to reconcile the difference. Once the error was identified, the erroneous data field was corrected.
- Check that from and to depths from surface on the lithology and assay tables increase down hole:
  - If any did not match, WSP reviewed downhole geological data to correct the errors.
- Identify drill holes which had no lithological, assay, survey, or wireline natural gamma ray logs (gamma logs):
  - Any drill holes missing all geological data were excluded from the geological model since they had no data to model and would cause false bull’s eyes and structural anomalies.
- Review Lithological Bed correlations for consistency and correct stratigraphic sequencing:
  - Any errors seen in the database were reviewed with original geological data and corrected.
- Check for data entry errors in collar survey and downhole survey records:

- Data entry errors including gaps in records and overlapping records were identified and fixed based on original geological data, as required. WSP also verified that drill holes loaded into the geological models matched general locations and layouts provided in base maps from Conda.

After the initial drill hole database validation, collar survey and downhole geological unit intervals, sample intervals, wireline gamma logs and analytical results were imported into a Golden Software Strater™ (Strater) project and a graphic downhole log was prepared for each drill hole. The graphic drill hole logs were used to facilitate visual inspection of each drill hole with regards to:

- Lithologic unit and assay sample depths matching appropriately.
- Lithologic unit and assay sample values matching appropriately.
- Lithologic unit and gamma logs matching appropriately (where gamma logs were available).

Minor errors, omissions or proposed revisions were identified by Itafos and WSP during the review process; these included typographic errors and omission of some data and observations as well as some minor re-correlations of geological units to honor the grade data. While minor, these errors, omissions or revisions were material. In each instance the error, omission, or revisions were reviewed with Conda senior geologists and any updates to the data were incorporated into the final geological databases to be used for modelling.

12.1.2 Grade Data Verification

In addition to the general database integrity checks discussed in the previous Item, WSP performed a review of the analytical grade data provided by Conda to ensure it was reliable, representative, and free of any significant errors or omissions. The grade data verification checks included but were not limited to the following:

- Check from/to depth overlaps in lithology table.
- Check assay sample table for overlaps in from/to depths.
- Check that grade sample intervals corresponded with lithology bed pick roof and floor intervals.
- Check that assay grade values were between 0% and 100%.
- Check that grade values did not total greater than 100% for an individual sample.
- Evaluate grade values against drill hole recovery data.

As part of WSP's standard analytical data reviews, tabular grade data is compared against signed assay certificates from the laboratories that performed the analytical test work to ensure the tabular data is free from transcription errors or omissions. However, except for a small number of Conda Projects QA/QC samples that were performed at independent third-party commercial laboratories, the bulk of the grade data for the Conda deposits were derived from analytical test work performed in-house at the CPP analytical laboratory. Signed analytical certificates were not generated by the CPP laboratory.

The WSP QP visited the CPP Analytical Laboratory during the Project site visit in April 2019 and again in September 2022 and it was the opinion of WSP's QP that the documentation, procedures, testing equipment, testing facilities, and controls in place for the onsite laboratory meet industry standards. Sample preparation and analytical instruments and procedures were consistent with those observed at other operations and commercial analytical laboratories and hence, there were no identified concerns during the visit.

While there can often be concerns during public disclosure with the bulk of the analyses being performed in-house, it is the WSP QP's opinion that the analytical results from the Conda Projects exploration programs analyzed have been consistent with the realized grades from the active mining operations at RVM and other past operations. This opinion was formulated by comparing drill hole assay values that were in mined out areas to production data as well as against quality control data provided from the mine stockpiles, trains, CPP stockpiles, and the wash plant and acid plant at the CPP.

Additionally, the active operations at the CMO and CPP rely on the on-site analytical laboratory to meet appropriate analytical standards and to produce reliable and representative results to ensure proper grade control from run-of-mine, stockpile, plant, and products.

In an effort to validate the CPP Analytical Laboratory, Conda completed a duplicate testing regime where 38 core samples and 37 RC samples from NDR, and 78 RC samples from SMC were analyzed at both the Conda CPP laboratory and at the independent commercial SGS laboratory in Denver, Colorado (SGS Denver). WSP reviewed the results from this regime and found that, except for a few outliers, the two data sets were within acceptable tolerances for duplicate analyses. Except for the outliers, the WSP data comparison results are as follows:

- P_2O_5 relative differences of less than +/- 4% (mean of 0.0% difference).
- MgO relative differences were less than +/-6% (mean of 6% difference).
- The H1SMC and NDR P_2O_5 datasets showed no clear high/low bias between the two laboratories.
- The H1SMC and NDR MgO datasets showed that the CPP laboratory typically reported lower values than SGS.

12.1.3 Other Data Verification

WSP performed high level reviews of the topographic data and topographic surface models for the two deposits using the drill hole collar elevations as spot checks against the topographic model elevations. The summary statistics for collar elevations versus topographic (original topography) elevations are presented by deposit in Table 12.1.

Table 12.1: Collar Elevation versus Topographic Elevation Summary Statistics

Deposit	Drill Hole Count	Absolute Elevation Difference (collar - topographic surface, feet)				
		Minimum	Maximum	Mean	Median	90th Percentile
NDR	281	0.0	18.4	3.9	3.5	7.5
H1SMC	363	0.0	162.0	11.2	6.0	13.7

In 2021, Itafos acquired a detailed LiDAR survey for both NDR and H1SMC. The differences in elevation between the collars and the new topographic survey have improved greatly for both. The larger differences that exist in H1SMC are due to the historical mining at SMC where legacy drill holes are used to model the deposit.

Based on the comparison with the drill hole data, the topography was deemed to be suitable for the purpose of estimating Mineral Resources.

Further discussion on the topographic elevation data and models are presented in Item 9.5 of this TR.

12.1.4 Limitations on Data Verification

The WSP QP was not directly involved in the exploration drilling and sampling programs that formed the basis for collecting the data used in the geological modelling and mineral resource estimates for the pre-2019 drilling at NDR and H1SMC for this Project. As a result, the WSP QP was not able to observe the drilling, sampling, or sample preparation while in progress for the pre-2019 programs and therefore WSP has had to rely upon forensic review of the exploration program data, documentation, and standard database validation checks to ensure the resultant geological database is representative and reliable for use in geological modelling and Mineral Resource and Reserve estimation.

Subsequent to the initial QP site visit, the WSP QP was on site for the 2019 drilling program in September 2019 that was intended to collect metallurgical bulk sample material for ongoing metallurgical studies on the NDR and H1SMC deposits. During this site visit, the WSP QP was able to observe the standard Conda drilling, logging, and sampling procedures, the majority of which were reported to be similar to those procedures employed by Conda during the exploration programs used to collect the data that forms the basis for this Project.

During the 2022 exploration program on NDR and H1SMC, the WSP QP again visited site and was able to observe the standard Conda drilling, logging, and sampling procedures.

The 2019 metallurgical drilling and sampling programs and 2022 exploration programs, that were observed by the WSP QP on the September 2019 and 2022 site visits were performed under the supervision of the same Itafos senior geologist and using the same exploration consulting team as the previous Conda exploration programs that were carried out for the Project.

While on site in September 2019, the WSP QP noted that the metallurgical drilling and sampling programs were executed to appropriate industry standards with regards to depth measurement, sample collection, and sample storage. This was again the case during the September 2022 site visit. This provided the WSP QP with the confidence that the previous exploration drilling programs that were managed by Conda’s current geological team also likely were executed to a similar industry standard.

The WSP QP did not perform any independent drilling, or collection of samples, for independent analyses on the Project.

12.2 Mining and Mineral Reserves Data Verification

12.2.1 Mine Methods, Design and Modifying Factors

- The WSP QP reviewed the current mining operations and methods at RVM and verified that similar methods and operations were appropriate and effective for use in both NDR and H1SMC.
- WSP QP reviewed historical operations data to verify that the mining modification factors were appropriate to use for NDR and H1SMC for converting resources to reserves, including mining recovery and sufficient dilution introduced into the drilling samples.
- WSP QP verified that current revenue and cost data will not materially impact RVM reserves which were previously stated in the 2019 TR.
- During the NDR and H1SMC pit optimization design work, the QP cross-checked and verified the results over multiple software platforms.
- The WSP QP visited the RVM operations and NDR and H1SMC resource areas during the Project site visit in September 2022 and it was the opinion of WSP's QP that the NDR and H1SMC identified mining methods, site locations, primary haulage access, external waste storage locations, surface water control locations, and proposed tipple location were reasonable and properly accommodated surface topographic features and hence, there were no identified concerns during the visit.

12.2.2 Mining Costs and Revenue Data

- The WSP QP reviewed the marketing data and projections developed by CRU and provided by Conda and verified for reasonableness. Conda cost unit rates were checked and verified against historical cost information and cost unit rates for reasonableness.
- ARO unit costs were reviewed and verified against the previous ARO estimates.

12.2.3 Limitations on Data Verification

- The WSP QP is not directly involved in the mining operation, and as such data verification was limited to visual observations and review of historical records.

12.3 Metallurgy and Mineral Processing Data Verification

The QP was not directly involved in the sampling preparation or test work and as a result, the QP has had to rely upon forensic review of the program data, documentation and validation checks to ensure the resultant test work is representative and reliable for use in the Metallurgy and Mineral Processing Items.

The QP performed a site visit for the Project from December 9 through December 10, 2022. The site visit focused on:

- General overview of ore processing operations at the Conda Phosphate Operation with Conda senior management team.
- QP oversight and review of metallurgical sample preparation, chain of custody procedures and analytical methods used for the 2022 NDR test work program that was underway at the time.

- Presential review of a test run performed on 2022 NDR test work program performed by Albatross Environmental and Process Consulting in line with the QP recommendations provided at the beginning of the program.

Additionally, the QP while on site noted that the metallurgical sampling, test work and analytical programs were executed to appropriate industry standards with regard to sample preparation, test methods and analytical data gathering. This provided QP added confidence that the previous programs that were managed by Conda’s current team were also likely executed to a similar industry standard.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

This Item presents the phosphate ore and beneficiated products characterizations studies for the Years 2018 to 2023 (unless otherwise indicated) to understand the CPP Wash Plant operation and to demonstrate the feasibility of continued production suitable Wash Plant products for the Phosphoric Acid Plant (PAP) using ore from the NDR and H1 Projects. These products include the beneficiated product (product, concentrate, or phosphate rock), tailings, recycle water, and ball mill griding of the beneficiated product for the PAP.

13.1 Test Work Description and Results – North Dry Ridge

13.1.1 Summary

This is a summary analysis of the bench test work performed on February 2023 on a representative ore sample from the NDR mine by Albatross Environmental and Process Consulting Inc. from Coldwater, ON, Canada (Albatross). The objective of the test work program was to ensure that NDR ore could be treated under the current wash plant configuration at the Conda Phosphate Operation (“CPP Wash Plant”).

The test work results demonstrate at the bench scale level that economic recovery of P_2O_5 can be achieved with NDR ore and is very similar to the historical CPO wash plant performance data both in grade and in recovery. Test results yielding on average 30.40% P_2O_5, 43.31% CaO, 0.78% MgO and a Minor Element Ratio (MER) of 0.090 for a P_2O_5 recovery of 79.69% and an MgO rejection rate of 38.04% were achieved. These values encountered on average during the test are very similar to the historical average CPP wash plant performance data.

13.1.2 Sample Preparation

An NDR composite sample, determined by WSP to be representative of the NDR deposit, was obtained through drilling activities conducted in 2022 as part of the NDR drilling program. To ensure the integrity of the samples and comply with chain of custody requirements, six 45-gallon plastic drums were utilized to store the core samples. These drums were securely sealed using locks or plastic seals and were stored at the CPP lab.

The assay results of the core samples obtained during the 2022 NDR drilling program were compiled in an Excel spreadsheet. These results were then used to derive a target blend ratio, aiming to match the anticipated P_2O_5 and MgO grades of the NDR ore deposit as defined by the mining block model. The block model indicated ore grades of 26.7% P_2O_5 and 0.84% MgO. The samples chosen for the blend calculation predominantly comprise the ore beds that would be extracted during mining operations. After several iterations, the derived mathematical grade was determined to be 26.0% P_2O_5 and 0.93% MgO. These values were submitted to the WSP Qualified Person for verification and approval of the blended grades. Once approval was obtained, the construction of the bulk sample commenced.

The drums were opened by Albatross, and samples were selected to match those chosen for the blend calculation. The samples were meticulously cross-checked with the corresponding entries in the spreadsheet to ensure accuracy in terms of sample identification and weight. Subsequently, the samples were transported to the assay lab at CPP.

A third verification was conducted to confirm the accuracy of the sample identification and weight. Each sample was then opened and poured onto a tarp for blending. Due to space constraints in the lab, the samples were mixed in three batches. Rolling the samples from corner to corner on the tarp was performed a minimum of 25 times to ensure thorough homogenization. The homogenized samples were subsequently transferred into 5-gallon buckets for further mixing.

Finally, each 5-gallon bucket underwent riffling, utilizing a large riffle, to achieve additional homogenization. As a result of the riffling process, the sample size was halved to create a smaller, manageable size of homogenous sample. The sample was further riffled down to produce a 1.5 kg sample, at which time, six representative samples were taken for feed assay.

13.1.3 Sample Characterization and Head Assay Results

Assay results were obtained using the CPP lab ICP-OES from the average of the six samples (Table 13.1).

Table 13.1: North Dry Ridge Bulk Samples As-Received Assay Values

Sample	P_2O_5	CaO	MgO	Al_2O_3	Fe_2O_3	Si	LOI
NDR Core	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %	wt. %
Bulk 1	26.61	39.13	0.83	3.09	1.07	7.57	7.83
Bulk 2	25.72	38.15	0.99	3.31	1.19	7.99	8.16
Bulk 3	26.34	38.74	0.85	3.17	1.47	7.56	8.14
Bulk 4	26.18	38.87	0.99	3.12	1.7	7.59	8.26
Bulk 5	26.52	39.31	0.83	3.10	1.66	7.56	7.83
Bulk 6	26.62	39.31	0.93	2.92	2.03	7.18	8.34
Average	**26.33**	**38.92**	**0.90**	**3.12**	**1.52**	**7.57**	**8.09**

Upon completion of the bulk sample analysis, it was observed that the P_2O_5 and MgO values closely aligned with the corresponding values derived from the mining block model. This favorable outcome prompted the initiation of test work on the NDR core samples.

To facilitate the test work, a total of 12 homogenous samples, each weighing 1,500 grams, were prepared by riffling the bulk NDR core samples. Among these samples, Sample #1 was dedicated to size-by-size analysis. The remaining three samples, namely Samples #2, #3, and #4, underwent the complete run-of-mine (ROM) wash plant process, and grinding of various size fractions. Subsequently, Samples #2, #3, and #4 were combined and averaged to generate a size distribution curve and mass balance. The detailed test results conducted on each of these samples are described in the Item below.

13.1.4 February 2023 NDR Test Work Results

The NDR composite sample determined by WSP as being representative of the NDR deposit was tested at a bench scale level by Albatross (North Dry Ridge Bench Scale Test Program, Project A23-12001, February 5, 2023).

The primary goal of this test work program was to assess the effectiveness of the existing wash plant in processing the NDR ore. To achieve this, a bench-scale process was designed to replicate the current wash plant's operations using a combination of scrubbing followed by grinding of the individual size fractions and reconstitution of the resulting size-by-size components of both Products and Rejects. Once the bench-scale process produced comparable results to the actual plant performance, the NDR core samples were subjected to this newly defined bench scale process for evaluation.

The results of those bench scale tests are summarized and averaged in the table (Table 13.2) below.

Table 13.2: NDR Bench Scale Test Results

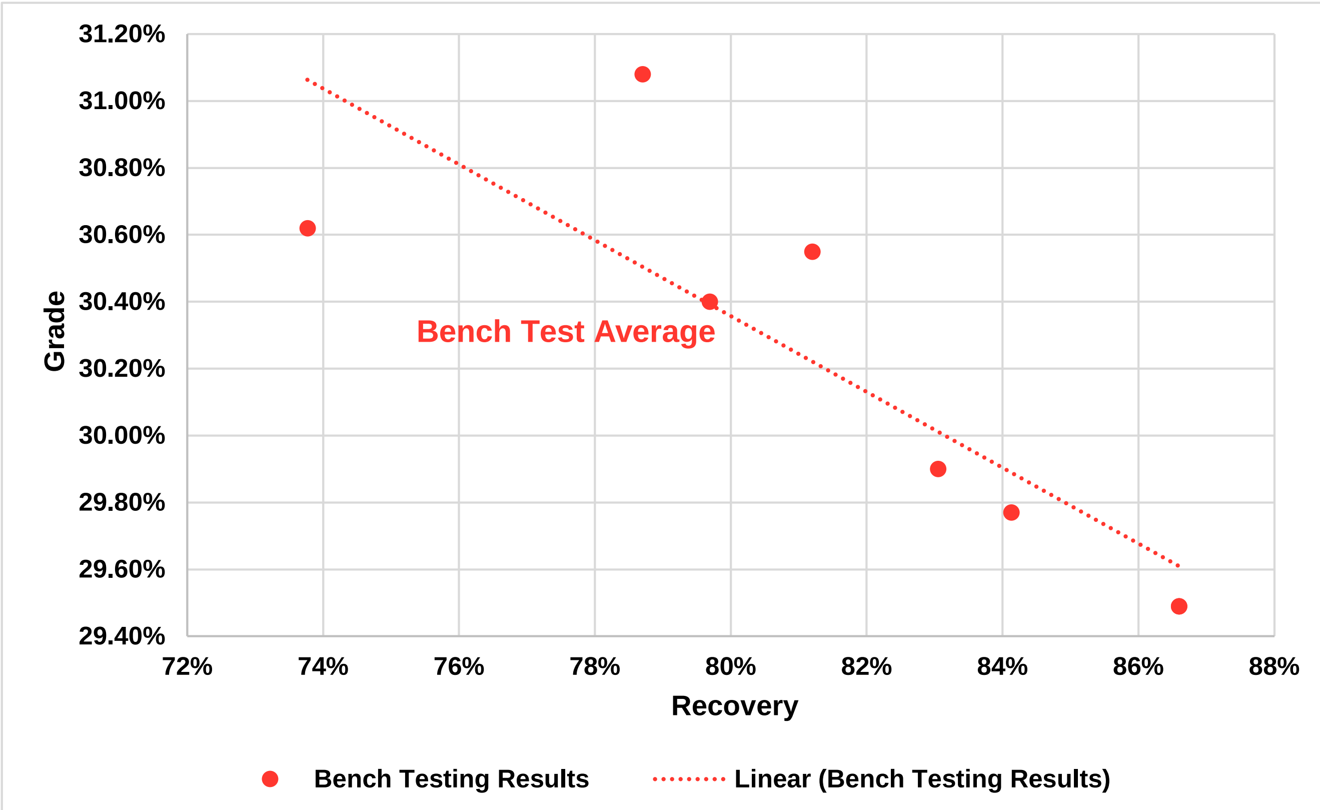
	P_2O_5	CaO	MgO		Al_2O_3	Fe_2O_3	SiO_2
Feed	26.33%	38.92%	0.90%		3.12%	1.52%	7.57%
CaO/P_2O_5	1.478				MER	0.213	
Bench #1							
Reject	14.87%	21.63%	0.81%		6.90%	2.42%	16.10%
Product	**29.49%**	**43.20%**	**0.91%**		**1.83%**	**0.74%**	**5.18%**
CaO/P_2O_5	**1.465**				**MER**	**0.118**	
P_2O_5 rec	**86.60%**				**MgO rej**	**21.35%**	
Bench #2							
Reject	15.48%	22.66%	0.90%		6.93%	2.95%	15.32%
Product	**31.08%**		**0.73%**		**1.17%**	**0.49%**	**3.66%**
CaO/P_2O_5	**1.361**				**MER**	**0.077**	
P_2O_5 rec	**78.70%**				**MgO rej**	**40.15%**	
Bench #3							
Reject	19.34%	29.39%	1.36%		3.26%	1.18%	13.68%
Product	**30.62%**		**0.69%**		**1.18%**	**0.49%**	**3.86%**
CaO/P_2O_5	**1.451**				**MER**	**0.077**	
P_2O_5 rec	**73.77%**				**MgO rej**	**52.61%**	
Average							
Reject	16.56%	24.56%	1.02%		5.70%	2.18%	15.03%
Product	**30.40%**	**43.31%**	**0.78%**		**1.39%**	**0.57%**	**4.23%**
CaO/P_2O_5	**1.425**				**MER**	**0.09**	
P_2O_5 rec	**79.69%**				**MgO rej**	**38.04%**	

Source: Albatross Consulting February 2023

13.1.5 Results Discussion

All the bench scale test results can be considered positive and adequate as they all achieved the required P_2O_5 grade and MER to produce MAP and SPA. Furthermore, P_2O_5 recoveries between 73.77% and 86.6% can in general all be considered economical. The relative variance in the different grade and recoveries for the bench scale test work performed can be attributed to a variety of factors, including inherent variability in the samples and the bench scale of the tests. However, bench scale tests should not be taken individually, rather the average of the test results should be taken into consideration, especially in absence of pilot scale test work to confirm the results. See Figure 13.1 for a graphical summary of the bench testing grade vs recovery.

Figure 13.1: CPP Wash Plant and Bench Test Grade Recovery Data



Bench scale test results on NDR representative samples yielded on average of 30.40% P_2O_5, 43.31% CaO, 4.23% SiO_2, 0.78% MgO, and a MER of 0.090 for a P_2O_5 recovery of 79.69% and a MgO rejection rate of 38.04%. Given the test work configuration was aimed at creating a mimic of the current CPP wash plant operation, it can therefore be inferred that this performance level is likely achievable in the CPP wash plant for NDR ore. As a result, it can be estimated that for the NDR ore tested, no processing factors or deleterious elements should have a significant adverse effect on potential economic extraction at CPP. In particular, the MgO reduction rate is similar to other high MgO ores and will not be significantly changed under the current beneficiation plant set up.

13.2 Test Work Description and Results – Husky1

13.2.1 Summary

Eriez Flotation Division (EFD) located in Erie, Pennsylvania (PA), carried out an assessment of the Husky1 phosphate ore sample to ascertain its potential for enhancement. The specific objective of the evaluation was to determine the feasibility of treating the ore to achieve a P_2O_5 content of 30% or higher, while simultaneously reducing the levels of MgO below 0.6% and SiO_2 below 10%, all while maintaining an 80% recovery of P_2O_5. To commence the evaluation, EFD performed pre-classification on the ore samples, ensuring that they passed 98% through a 9.5 mm sieve. Subsequently, a series of bench scale studies were conducted to establish the optimal operating conditions for key unit operations, namely attrition scrubbing, milling, and flotation. Building upon prior research conducted on high MgO ores by Albatross, it was determined that the removal of surface coatings was necessary for successful flotation. Consequently, the preliminary testing program encompassed comprehensive scrubbing studies and flotation tests.

Phase 1 bench scale scrubbing studies involved testing different pH levels and durations. The optimal conditions determined were neutral pH and a 10-minute scrubbing duration before size reduction and milling. Two milling studies were conducted on separate mill feeds targeting different size fractions. Benchtop flotation tests indicated a two-stage reverse flotation approach using specific collectors and pH conditions was necessary to achieve target grades and recoveries.

In the second phase, additional bench scale studies investigated the replacement of attrition scrubbing with rotary washing to minimize phosphate loss in the smaller size fraction. Processing of the bulk material began with rotary washing and milling under neutral conditions. Flotation response was explored without further attrition scrubbing and a combined upper and lower zone rotary washing test with high pH was attempted.

Based on the bench scale results, rotary washing and milling under neutral conditions were carried out on a blended lower and upper zone feed. Material was dry classified using a 48 in vibratory screen and ground to the desired product size distribution. Flotation studies were conducted using HydroFloat and Column Flotation methods on specific mill product size fractions. Both methods successfully removed dolomitic impurities resulting in a final product with low SiO_2 and MgO content.

The program achieved success in developing a robust flowsheet and material balance. The final bulk sample contained 30.1% P_2O_5, 9.3% SiO_2, and 0.40% MgO, with an overall phosphate recovery rate of 78.6%. Only 21.4% of the global phosphate was discarded in the final tailing stream. It is therefore estimated that for the Husky 1 ore tested, no processing factors or deleterious elements should have a significant adverse effect on potential economic extraction at CPP under this new modified flowsheet.

13.2.2 Sample Preparation

The Husky1 test program used a series of composite ore samples as determined by WSP as being representative of ore from the Husky1 mine. The program focused on treating two distinct ore zones; the Upper Zone comprising 41.6% of the total weight and the Lower Zone accounting for the remaining 58.4%. During Phase 1 and Phase 2, separate preparation and testing were conducted for each zone. However, for simplicity and to mimic real processing plant operations, the Upper and Lower zones were combined in a 41.6:58.4 ratio as a single bulk stream during Phase 2.

13.2.3 Sample Characterization and Head Assay Results

13.2.3.1 Phase 1

Before testing the bulk sample, smaller samples were obtained from each zone to determine optimal conditions for attrition scrubbing, grinding characteristics, liberation, and flotation responses. The Upper Zone material, weighing 120 kg, and the Lower Zone material, weight 180 kg, were homogenized separately using cone-and-quartering methods. The chemical analysis was performed on the materials using X-ray fluorescence (XRF). The Upper Zone exhibited a P_2O_5 head grade of 24.7% with SiO_2 and MgO contents of 15.1% and 0.49%, respectively, while the Lower Zone had a P_2O_5 head grade of 24.0% with SiO_2 and MgO contents of 14.9% and 1.1%, respectively. Size-by-size assays of the Upper and Lower Zones are detailed in Table 13.3 and Table 13.4, respectively.

Table 13.3: Phase 1 Upper Zone As-Received PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
21,000	**1,180**	47.10	100.00	24.00	40.50	14.90	0.60	1.90	0.80	0.50	0.20	1.00	0.10	0.20	12.50
1,180	**38**	39.90	52.90	29.50	44.10	9.50	0.30	1.00	0.50	0.40	0.20	0.90	0.10	0.20	10.90
38	**0**	12.90	12.90	12.60	23.30	33.10	0.80	5.60	2.40	1.50	0.01	1.10	0.47	0.33	15.20
Total				**24.70**	**39.70**	**15.10**	**0.49**	**2.00**	**0.89**	**0.59**	**0.16**	**0.99**	**0.16**	**0.20**	**12.20**

Table 13.4: Phase 1 Lower Zone As-Received PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
21,000	**1,180**	50.90	100.00	22.60	38.00	16.20	1.40	2.00	0.90	0.80	0.20	1.20	0.10	0.20	13.50
1,180	**38**	38.60	49.10	28.80	43.80	9.40	0.60	0.90	0.50	0.40	0.40	1.20	0.00	0.10	10.90
38	**0**	10.40	10.40	13.30	25.30	29.40	1.50	5.10	2.48	1.57	0.31	0.98	0.36	0.37	15.80
Total				**24.00**	**38.90**	**14.90**	**1.10**	**1.90**	**0.91**	**0.74**	**0.32**	**1.20**	**0.13**	**0.18**	**12.80**

13.2.3.2 Phase 2

For Phase 2, EFD received 1,400 kg of Lower Zone ore and 930 kg of Upper Zone ore, both with a 99% passing rate of 9.5 mm. Bulk samples were homogenized using cone-and-quartering methods, and representative samples were taken for as-received particle size distribution and chemical analysis using XRF. The particle size distributions for the Upper Zone and Lower Zone can be found in Table 13.5 and Table 13.6, respectively, and were similar to Phase 1 as-received values.

Table 13.5: Phase 2 Upper Zone As-Received PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
21,000	**1,180**	52.70	100.00	22.20	37.80	16.60	1.40	2.30	0.90	0.80	0.30	1.10	0.10	0.20	13.30
1,180	**38**	39.60	47.30	28.70	43.40	9.90	0.90	1.40	0.50	0.50	0.60	1.20	0.10	0.20	10.50
38	**0**	7.80	7.80	13.50	25.50	30.10	1.80	5.30	2.60	1.60	0.30	0.98	0.37	0.38	14.60
Total				**24.10**	**39.00**	**15.00**	**1.20**	**2.20**	**0.88**	**0.73**	**0.44**	**1.20**	**0.12**	**0.17**	**12.30**

Table 13.6: Phase 2 Lower Zone As-Received PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
21,000	**1,180**	50.00	100.00	24.10	40.10	15.00	0.80	2.50	0.80	0.60	0.30	1.00	0.20	0.20	12.30
1,180	**38**	40.40	50.00	29.10	43.30	10.40	0.50	1.60	0.60	0.40	0.40	0.90	0.10	0.20	10.90
38	**0**	9.60	9.60	12.60	23.40	32.80	1.00	6.00	2.40	1.50	0.23	1.10	0.48	0.34	16.00
Total				**25.00**	**39.80**	**14.90**	**0.70**	**2.50**	**0.86**	**0.59**	**0.32**	**0.98**	**0.16**	**0.20**	**12.10**

Phase 2 samples were initially crushed to at least 95% passing 4 mm before washing and scrubbing, which differed from Phase 1 where crushing occurred after attrition scrubbing of the as-received material. Size fraction weight percentages and associated chemical analyses were combined as necessary to determine parent size fraction weight and oxide distributions.

13.2.4 Results Discussion

Initial bench-scale testing involving different unit operations was carried out to identify the optimal process flowsheet and operating conditions for bulk processing. This included determining the need for attrition scrubbing, milling studies for optimal phosphate liberation and deportment, and evaluating the effect of attrition scrubbing prior to flotation. The attrition scrubbing studies were performed at neutral and high pH, with a duration of 10 minutes based on previous test work conducted on similar ores.

13.2.4.1 Phase 1

13.2.4.1.1 Attrition Scrubber Studies

Attrition scrubbing studies were conducted by Albatross on representative splits of CPP phosphate ore to assess its friability. The studies used a D12 benchtop flotation machine with a scrubbing impeller. The as-received ore was tested without prior size reduction. The aim was to understand how the ore responds to mechanical scrubbing, providing valuable insights for subsequent processing steps. Upon conclusion of independent attrition scrubbing of the as-received feed at neutral and alkaline conditions, similar particle size and oxide distributions were achieved. The particle size distributions and size-by-size chemical analyses of the lower zone attrition scrubbed products are summarized in Table 13.7 and Table 13.8 for the Lower Zone and in Table 13.9 and Table 13.10 for the Upper Zone.

Table 13.7: Lower Zone 10 Minute Neutral Attrition Scrub Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
21,000	**9,500**	0.00	100.00												
9,500	**38**	79.30	100.00	27.10	42.30	11.00	1.00	1.10	0.50	0.50	0.40	1.20	0.10	0.10	11.60
38	**0**	20.90	20.90	15.00	27.60	26.50	1.50	4.80	2.50	1.60	0.18	1.10	0.32	0.35	14.50

Table 13.8: Lower Zone 10 Minute Alkaline Attrition Scrub Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
21,000	**9,500**	0.30	100.00												
9,500	**38**	79.90	99.70	26.60	42.00	11.50	1.10	1.20	0.60	0.50	0.40	1.20	0.10	0.10	11.70
38	**0**	19.80	19.80	15.50	28.60	26.80	1.60	4.40	2.10	1.40	0.21	1.00	0.32	0.32	14.90

Table 13.9: Upper Zone Neutral Attrition Scrubber Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
21,000	**9,500**	0.20	100.00												
9,500	**38**	75.10	99.80	28.30	44.10	9.80	0.50	1.20	0.50	0.30	0.30	1.00	0.10	0.20	11.80
38	**0**	24.60	24.60	15.10	27.00	28.10	0.78	4.90	2.00	1.30	0.22	1.10	0.40	0.29	16.20

Table 13.10: Upper Zone Alkaline Attrition Scrubber Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
21,000	**9,500**	0.40	100.00												
9,500	**38**	77.00	99.60	28.10	43.60	10.50	0.40	1.20	0.50	0.40	0.30	0.90	0.10	0.20	11.20
38	**0**	22.60	22.60	14.50	26.30	28.50	0.89	5.20	2.10	1.30	0.27	1.10	0.41	0.31	15.40

The attrition scrubbing benchtop studies were performed at neutral and high pH (alkaline), with a duration of 10 minutes based on previous test work carried out on similar ores. The results of those initial benchtop tests are summarized in Table 13.11.

Table 13.11: Attrition Scrubber Product Benchtop Tests Results

Test Number	Feed Type	Reagents and Scrub Conditions	Dosages (g/t) / Acid Used / Addition Sequence / pH Measured	Sample ID	Chemical Analysis (wt. %)							Distribution (wt. %)			
					P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	LOI	Mass	P_2O_5	MgO	SiO_2
1	Lower Zone	CustoFloat 520	551	MgO Float	9.70	41.80	6.90	6.30	0.81	0.29	31.60	3.20	1.10	29.60	2.30
		CA1507	153	Amine Float	20.30	32.80	29.30	0.54	1.90	0.72	9.70	9.90	6.90	7.70	30.00
		10 min Scrub at pH=11.5	(Addition of H_3PO_4 before MgO Float)	Final Product	30.80	45.90	7.50	0.49	0.50	0.29	9.70	86.90	92.10	62.70	67.70
		(pH =5.0-5.2 for 520, no-reg. for 1507)		Calculated Feed	29.10	44.50	9.60	0.69	0.65	0.33	10.40	100.00	100.00	100.00	100.00
4	Upper Zone	CustoFloat 520	589	MgO Float	14.90	44.20	9.90	0.91	1.30	0.55	25.50	1.60	0.80	6.30	1.80
		CA1507	162	Amine Float	17.70	28.30	31.80	0.31	3.00	1.30	12.40	1.60	1.00	2.30	6.20
		10 min Scrub at pH=11.5	(Addition of H_3PO_4 before MgO Float)	Final Product	30.70	45.10	8.00	0.21	0.81	0.37	10.80	96.80	98.30	91.40	91.90
		(pH =5.0-5.2 for 520, no-reg. for 1507)		Calculated Feed	30.20	44.80	8.40	0.22	0.85	0.38	11.10	100.00	100.00	100.00	100.00
5	Upper Zone	CustoFloat 520	589	MgO Float	19.30	43.20	10.90	0.68	1.50	0.43	20.60	6.10	3.80	17.60	7.90
		CA1507	162	Amine Float	21.20	33.70	25.20	0.24	1.80	0.74	11.50	3.40	2.40	3.60	10.40
		10 min Scrub at pH=11.5	(Addition of H_3PO_4 before MgO Float)	Final Product	31.70	45.20	7.50	0.20	0.80	0.35	10.60	90.50	93.80	78.80	81.60
		(pH =5.0-5.2 for 520, no-reg. for 1507)		Calculated Feed	30.60	44.70	8.30	0.23	0.88	0.37	11.20	100.00	100.00	100.00	100.00
7	Lower Zone	CustoFloat 520	540	MgO Float	3.50	42.20	4.80	7.70	0.85	0.17	40.20	0.50	0.10	6.10	0.30
		CA1507	150	Amine Float	17.70	32.60	27.20	1.50	2.10	0.80	13.00	4.50	2.80	9.40	12.70
		10 min Scrub at pH=7.6	(Addition of H_3PO_4 before MgO Float)	Final Product	29.30	44.60	8.80	0.62	0.71	0.32	11.20	95.00	97.20	84.50	87.00
		(pH =5.0-5.2 for 520, no-reg. for 1507)		Calculated Feed	28.60	44.10	9.60	0.69	0.78	0.34	11.40	100.00	100.00	100.00	100.00
8	Upper Zone	CustoFloat 520	589	MgO Float	11.30	46.90	7.50	1.10	1.10	0.27	29.70	2.20	0.80	9.60	2.20
		CA1507	162	Amine Float	24.10	36.30	19.00	0.27	2.20	0.76	12.90	2.80	2.20	3.10	7.10
		10 min Scrub at pH=7.6	(Addition of H_3PO_4 before MgO Float)	Final Product	31.20	45.50	7.30	0.22	0.60	0.34	10.70	95.00	97.00	87.30	90.80
		(pH =5.0-5.2 for 520, no-reg. for 1507)		Calculated Feed	30.60	45.20	7.60	0.24	0.70	0.35	11.20	100.00	100.00	100.00	100.00

The evaluation of benchtop flotation results revealed that there were no significant differences in performance between alkaline flotation tests (tests 1, 4, and 5) and neutral scrubbed samples (tests 7 and 8). The alkaline flotation tests for the lower zone produced P_2O_5, SiO_2, and MgO head grades of 30.8%, 7.5%, and 0.49%, respectively, while the neutral scrub flotation product had head grades of 29.3%, 8.8%, and 0.62%, respectively.

13.2.4.1.2 Milling Studies

Milling studies were conducted to determine the appropriate degree of liberation for flotation. Initial milling focused on producing milled products for each zone at separate P95s of 1180 and 500 microns. The mill feed was prepared by scrubbing sufficient samples from each zone at a neutral pH, similar to the previous benchtop tests, followed by classification at 4mm using wet vibratory screening. The oversize from the 4mm screen was air dried and roll crushed to a P98 of 4mm. The roll crushed product and the naturally passing 4mm material were wet screened at the desired screen size of 1180 or 500 microns, with the larger size reporting to the rod mill. The mill studies used 10 kg of feed at 60% solids by weight, with varying mill times until the desired mill product P95 of 1180 or 500 microns was achieved.

Upon analyzing the circuit flowsheet, it was determined that the blended upper and lower zone undersize material from the 1180-micron screen, after attrition scrubbing, would yield the target product grade after removing the minus 38-micron slimes. The assay and global phosphate distribution for the 1180x38 micron and 38x0 micron attrition scrubber product can be found in Table 13.12. Results for screening at 20 microns can be found in Table 13.13. Similarly, the blended upper and lower 500-micron screen undersize, after attrition scrubbing, would produce a plus 30% P_2O_5 product grade after rejecting the minus 38-micron slimes fraction. The assay and global phosphate distribution for the 500x38 micron and 38x0 micron attrition scrubber product can be found in Table 13.14.

Classifying the minus 500-micron mill product at 20 microns did not result in a final product grade. The assay and phosphate distribution for the 850x20 micron and 20x0 micron fractions after screening at 20 microns can be found in Table 13.15. No discernible differences in size-by-size characteristics were observed in any of the three streams.

Table 13.12: Upper and Lower Zone Blended 1180-Micron Mill Study Attrition Scrubber Product 38-Micron Cut

Particle Size (µm)		Wt. Split (%)		Assays (%)			Global Distribution (%)		
Passing	Retained	Ind.	Cum. Passing	P_2O_5	SiO_2	MgO	P_2O_5	SiO_2	MgO
1180	38	66.30	100.00	30.60	7.50	0.48	53.10	21.50	22.00
38	0	33.70	66.30	14.80	28.00	1.20	13.10	41.00	27.10

Table 13.13: Upper and Lower Zone Blended 1180-Micron Mill Study Attrition Scrubber Product 20-Micron

Particle Size (µm)		Wt. Split (%)		Assays (%)			Global Distribution (%)		
Passing	Retained	Ind.	Cum. Passing	P_2O_5	SiO_2	MgO	P_2O_5	SiO_2	MgO
1180	20	74.10	100.00	29.20	9.90	0.53	56.70	31.90	27.00
20	0	25.90	74.10	14.00	27.20	1.20	9.50	30.60	22.10

Table 13.14: Upper and Lower Zone Blended 500-Micron Mill Study Attrition Scrubber Product 38-Micron Cut

Particle Size (µm)		Wt. Split (%)		Assays (%)			Global Distribution (%)		
Passing	Retained	Ind.	Cum. Passing	P_2O_5	SiO_2	MgO	P_2O_5	SiO_2	MgO
850	38	67.60	100.00	30.90	6.90	0.44	51.10	20.20	19.80
38	0	32.40	32.40	15.10	27.40	1.20	12.00	38.40	25.10

Table 13.15: Upper and Lower Zone Blended 500-Micron Mill Study Attrition Scrubber Product 20-Micron Cut

Particle Size (µm)		Wt. Split (%)		Assays (%)			Global Distribution (%)		
Passing	Retained	Ind.	Cum. Passing	P_2O_5	SiO_2	MgO	P_2O_5	SiO_2	MgO
850	20	75.20	100.00	29.60	9.20	0.49	54.40	30.00	24.50
20	0	24.80	75.20	14.30	26.70	1.20	8.60	28.60	20.30

13.2.4.1.3 Milled Product Benchtop Flotation Studies

Benchtop flotation tests were then conducted on the scrubbed and non-scrubbed 300-micron milled products to determine the most favorable feed preparation method. The results did not show a clear advantage of an additional alkaline or neutral scrubbing stage after milling. The upper zone attrition scrubbed coarse flotation feed tests produced an acceptable P_2O_5 concentrate grade of 30-32% with recoveries in the mid-80 percent range (~85%). The upper zone alkaline tests yielded a maximum concentrate P_2O_5 grade of 31.7%, with SiO_2 and MgO head grades of 7.5% and 0.20%, respectively, compared to 31.2% P_2O_5, 7.3% SiO_2, and 0.22% MgO for the neutral test. Based on these results, milling studies were conducted using neutral scrubbing prior to comminution and feed generation for the mill.

13.2.4.2 Phase 2

In order to explore a potentially gentler alternative to attrition scrubbing, an investigation was conducted to evaluate the effectiveness of rotary washing in removing organic matter from particle surfaces while minimizing material loss to the slimes fraction. Sample splits were taken from each zone to compare rotary washing with attrition scrubbing prior to milling. The samples were roll crushed to 95% passing 4 mm before undergoing washing or scrubbing, simplifying the process compared to Phase 1 testing where crushing took place after attrition scrubbing of the as-received material. Size fraction weight percentages and associated chemical analyses were combined as needed to calculate parent size fraction weight and oxide distributions.

13.2.4.2.1 Rotary Washing

Representative samples from each zone were subjected to rotary washing as a pre-milling treatment. The samples were dry screened at 4mm, and the plus 4 mm material was roll crushed to 95% passing 4 mm. The crushed material was then blended with the 4 mm screen undersize and rotary washed at 65% solids for 10 minutes at a neutral pH, using a cement mixer. The washed material was wet screened at 500 microns, and the undersize from this screen was further wet screened at 38 microns. The 500x38 micron material was collected as a natural product, while the 38x0 micron fraction was discarded as slimes.

On the other hand, the oversize from the 4mmx500 micron screen was rod milled to 95-98% passing 300 microns. The milled product was then classified at 150 and 38 microns to generate split feed flotation feedstocks. The 300x150 micron and 150x38 micron fractions represented the HydroFloat and column flotation feedstocks, respectively, while the 38x0 micron fraction was discarded as slimes. Benchtop flotation tests were conducted on the HydroFloat and column flotation streams to assess their respective flotation responses.

13.2.4.2.1.1 Lower Zone Rotary Washing

During the rotary washing milling study, representative sample splits were taken to analyze the particle size distributions resulting from the combination of rotary washing and milling. Comparing the rotary washing feed with its product, no significant differences in particle size distributions were observed, indicating minimal losses of apatite to the slimes fraction before classification and milling. The particle size and oxide distributions of the rotary washing feed and product can be found in Table 13.16 and Table 13.17, respectively.

Table 13.16: Lower Zone Rotary Washing Feed PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**500**	59.20	100.00	23.70	38.70	15.30	1.30	2.00	0.90	0.70	0.20	1.20	0.10	0.20	12.90
500	**38**	30.40	40.80	28.90	43.90	9.80	0.70	1.10	0.50	0.40	0.40	1.20	0.10	0.20	10.20
38	**0**	10.50	10.50	13.70	26.20	30.00	1.70	5.00	2.50	1.60	0.10	1.00	0.40	0.40	14.90

Table 13.17: Lower Zone Rotary Washing Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**500**	59.20	100.00	23.70	46.30	16.40	1.50	2.30	0.90	0.80	0.30	1.40	0.10	0.20	14.40
500	**38**	30.40	40.80	29.70	168.40	64.90	4.90	9.50	4.20	3.20	1.30	5.10	0.50	0.80	52.30
38	**0**	10.50	10.50	13.20	25.10	30.50	1.60	5.50	2.70	1.70	0.16	1.00	0.37	0.38	15.20

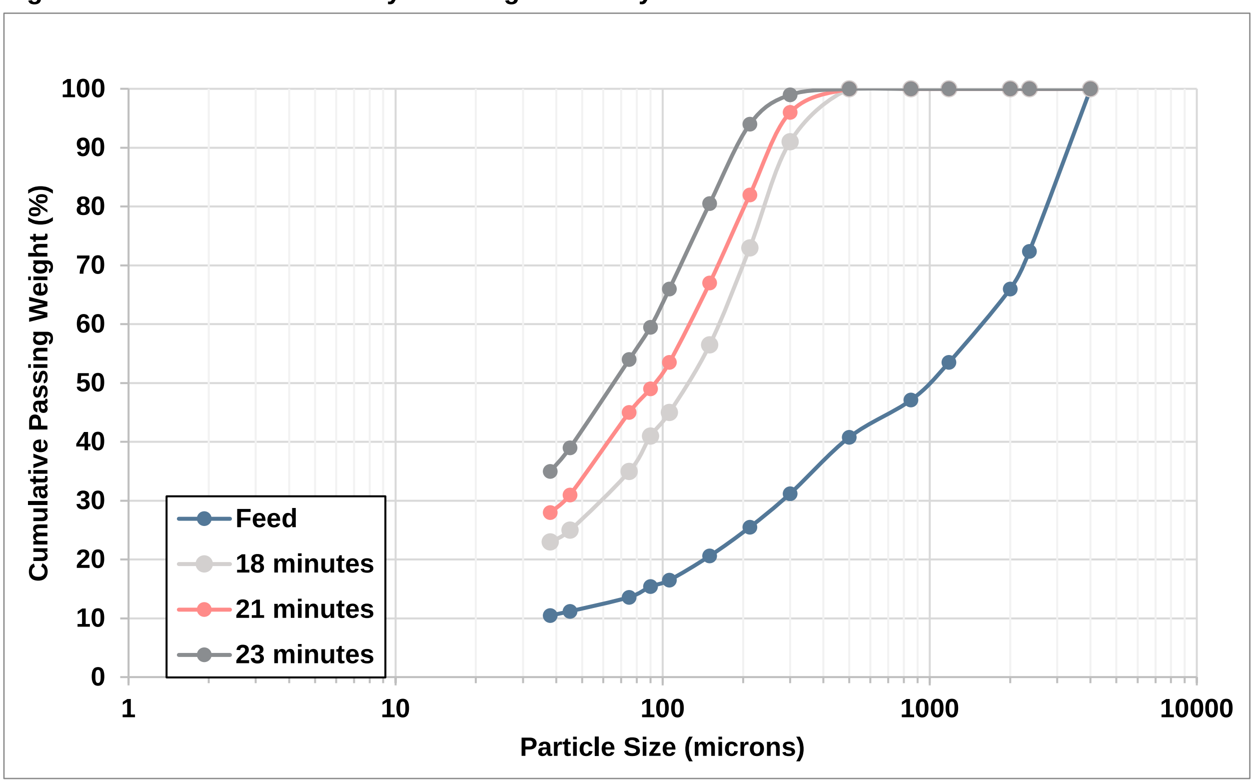
Similar to the Phase 1 attrition scrubbing studies, the head grade of the 500x38 micron size fraction was analyzed to determine if a natural product could be obtained after rotary washing. In the lower zone, rotary washing yielded a 500x38 micron head grade of 29.7% P_2O_5, with SiO_2 and MgO head grades of 8.5% and 0.62%, respectively.

For the 500-micron screen oversize, milling was conducted for increasing times to establish a grinding curve and target a mill product with a P95-98 of 300 microns. The mill batches were prepared by adjusting 10 kg of dry solids to 60% solids in a laboratory rod mill, and milling times of 18, 21, and 23 minutes were tested. The optimal milled product particle size distribution was achieved after 23 minutes of grinding, as detailed in Table 13.18. The size distributions for each milling time are summarized in Figure 13.2.

Table 13.18: Lower Zone Rotary Washing Milled Product

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
300	**38**	68.50	100.00	26.70	41.90	11.90	1.10	1.40	0.60	0.50	0.20	1.10	0.10	0.10	11.90
38	**0**	31.60	31.60	16.70	31.30	22.80	2.00	3.80	2.20	1.20	0.18	1.20	0.25	0.24	15.70

Figure 13.2: Lower Zone Rotary Washing Mill Study



13.2.4.2.1.2 Upper Zone Rotary Washing

Similar to the lower zone rotary washing study, particle size distributions of the rotary washing feed and product were analyzed for the upper zone. Comparing the distributions, no significant changes were observed, indicating minimal weight and apatite losses to the slimes fraction before classification and milling. The rotary washing feed and particle size and oxide distributions are presented in Table 13.19 and Table 13.20.

In the upper zone, the head grade of the 500x38 micron size fraction was analyzed to determine the quality of the natural product obtained after rotary washing. The upper zone rotary washed product had P_2O_5, SiO_2, and MgO head grades of 30.3%, 8.8%, and 0.25%, respectively. The size distributions for each milling time are summarized in Figure 13.3.

Table 13.19: Upper Zone Rotary Washing Feed PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**500**	58.40	100.00	25.00	41.10	14.10	0.60	1.60	0.80	0.50	0.20	1.10	0.10	0.20	13.00
500	**38**	32.00	41.60	29.10	43.40	10.60	0.30	1.40	0.60	0.40	0.20	0.90	0.10	0.20	11.10
38	**0**	9.70	9.70	12.90	24.50	31.80	0.88	5.70	2.30	1.40	0.06	1.10	0.45	0.33	15.50

Table 13.20: Upper Zone Rotary Washing Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**500**	56.30	100.00	25.50	42.00	13.50	0.50	1.80	0.70	0.49	0.11	1.02	0.12	0.19	11.71
500	**38**	32.20	43.70	30.30	45.00	8.80	0.30	1.00	0.46	0.31	0.09	0.88	0.05	0.17	10.31
38	**0**	11.50	11.50	12.30	23.20	33.40	0.80	5.90	2.39	1.50	0.06	1.04	0.49	0.33	15.40

The particle size distribution and chemical analysis for the milled product is displayed in Table 13.21.

Table 13.21: Upper Zone Rotary Washing Mill Product

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
300	**38**	68.70	100.00	28.70	45.00	9.70	0.40	1.20	0.50	0.30	0.10	0.90	0.10	0.20	10.90
38	**0**	31.40	31.40	17.30	33.80	21.80	0.89	3.60	1.90	0.88	0.20	1.20	0.28	0.23	14.70

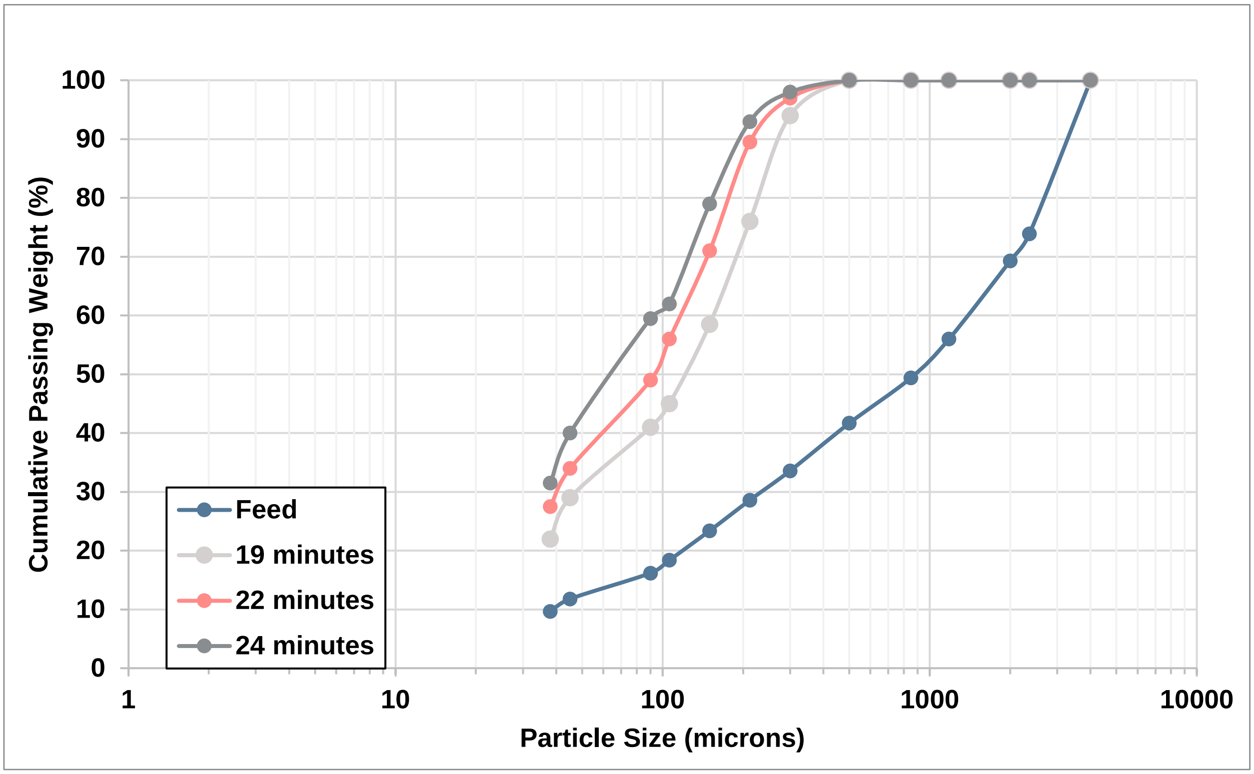


Figure 13.3: Upper Zone Rotary Washing Mill Study

13.2.4.2.2 Attrition Scrubbing

In the subsequent phase of the study, representative samples were collected from each zone for attrition scrubbing pre-milling treatment. The samples underwent dry screening at 4 mm, and the plus 4 mm material was roll crushed to 95% passing 4 mm. The crushed material was then blended with the 4 mm screen undersize and subjected to attrition scrubbing at 65% solids for 10 minutes using a D12 benchtop flotation device. The scrubbed material was wet screened at 500 microns, and the undersize from this screen was further wet screened at 38 microns. The 500x38 micron material was collected as a natural product, while the 38x0 micron fraction was discarded as slimes.

Similarly, the oversize from the 4mmx500 micron screen was rod milled to 95-98% passing 300 microns. The milled product was then classified at 150 and 38 microns to generate split feed flotation feedstocks. The 300x150 micron and 38x0 micron fractions represented the HydroFloat and column flotation feedstocks, respectively, while the 38x0 micron fraction was discarded. Benchtop flotation tests were conducted on the HydroFloat and column feedstocks to assess their flotation responses.

13.2.4.2.2.1 Lower Zone Attrition Scrubbing

During the attrition scrubbing milling study, representative sample splits were taken to analyze the particle size distributions resulting from the combination of attrition scrubbing and milling. Comparing the attrition scrubber feed with its product, significant differences in particle size distributions were observed, indicating losses of apatite to the slimes fraction before classification and milling. The particle size and oxide distributions of the attrition scrubber feed and product are summarized in Table 13.22 and Table 13.23.

Table 13.22: Lower Zone Attrition Scrubber Feed PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	500	56.80	100.00	23.80	38.90	15.30	1.40	2.00	0.90	0.70	0.30	1.30	0.10	0.20	12.70
500	38	34.20	43.20	29.00	44.10	9.70	0.60	1.00	0.50	0.40	0.40	1.20	0.00	0.20	10.30
38	0	9.10	9.10	13.50	25.80	30.30	1.60	5.00	2.50	1.60	0.25	0.98	0.38	0.35	14.90

Table 13.23: Lower Zone Attrition Scrubber Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	500	50.00	100.00	23.90	39.00	14.90	1.40	1.90	0.80	0.70	0.20	1.30	0.10	0.20	13.40
500	38	30.90	50.00	31.30	46.60	6.80	0.60	0.60	0.20	0.30	0.50	1.20	0.00	0.10	9.70
38	0	19.10	19.10	14.70	27.40	28.30	1.50	4.80	2.40	1.50	0.18	1.10	0.34	0.35	14.40

Similar to the Phase 1 attrition scrubbing studies, the head grade of the 500x38 micron size fraction was analyzed to determine if a natural product could be obtained after attrition scrubbing. In the lower zone, attrition scrubbing yielded a 500x38 micron head grade of 31.3% P_2O_5, with SiO_2 and MgO head grades of 6.8% and 0.57%, respectively.

For the 500-micron screen oversize, milling was performed at increasing times to establish a grinding curve and target a milled product with a P95-98 of 300 microns. The mill batches were prepared by adjusting 10 kg of dry solids to 60% solids in a laboratory rod mill, and milling times of 18, 21, 23, and 25 minutes were tested. The optimal milled product particle size distribution is detailed in Table 13.24.

Table 13.24: Lower Zone Attrition Scrubber Mill Product

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
300	38	70.70	100.00	26.20	41.40	12.40	1.30	1.40	0.60	0.60	0.30	1.20	0.10	0.10	12.80
38	0	29.40	29.40	16.80	31.90	22.10	2.00	3.50	1.90	1.20	0.21	1.30	0.23	0.23	15.90

13.2.4.2.2.2 Upper Zone Attrition Scrubbing

Similarly, the particle size distributions of the upper zone product after attrition scrubbing and milling were analyzed. Comparing the distributions, significant differences were observed, indicating losses of apatite to the slimes fraction before classification and milling. The attrition scrubber feed and particle size and oxide distributions are presented in Table 13.25 and Table 13.26

Table 13.25: Upper Zone Attrition Scrubber Feed PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	500	56.10	100.00	25.20	41.70	13.70	0.60	1.90	0.70	0.50	0.10	1.00	0.10	0.20	11.90
500	38	34.20	43.90	28.50	43.00	10.90	0.30	1.50	0.60	0.40	0.10	0.90	0.10	0.20	10.90
38	0	9.80	9.80	12.70	24.20	32.10	0.85	5.80	2.38	1.43	0.05	1.07	0.45	0.33	15.40

Table 13.26: Upper Zone Attrition Scrubber Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	500	66.30	100.00	24.00	39.70	14.90	1.10	2.00	0.80	0.70	0.30	1.10	0.10	0.20	13.00
500	38	25.30	33.70	28.70	43.30	10.10	0.50	1.30	0.60	0.40	0.30	1.00	0.10	0.20	11.40
38	0	8.40	8.40	13.00	24.60	31.90	1.30	5.60	2.50	1.60	0.20	1.00	0.40	0.40	14.80

In Phase 1, attrition scrubbing studies were conducted to determine the potential for obtaining a natural product from the 500x38 micron size fraction. Following attrition scrubbing of the upper zone, a head grade of 32.1% P_2O_5, with SiO_2 and MgO head grades of 6.6% and 0.23% respectively, was achieved. This indicated successful removal of impurities and improvement in the phosphate grade.

In Phase 2, the 500-micron screen oversize from attrition scrubbing was subjected to milling for different durations to establish a grinding curve. The objective was to obtain a milled product with a particle size distribution targeting a P95-98 of 300 microns. Milling times of 19, 22, and 23 minutes were tested. Based on the analysis, a milling time of 22 minutes was determined as optimal, providing the desired particle size distribution.

13.2.4.2.3 Combined Upper and Lower Zone Rotary Washing

To investigate the impact of pH adjustment on the flotation response, a study was conducted on a combined upper and lower zone rotary washed product. Instead of attrition scrubbing the milled product, the pH was adjusted to 11.5 with NaOH during the milling stage. The rotary washer feed and product particle size and oxide distributions were examined, as shown in Table 13.27 and Table 13.28. The combined rotary washing product had P_2O_5, SiO_2, and MgO head grades of 30.2%, 9.5%, and 0.53% respectively.

Table 13.27: Blended Lower and Upper Zone Rotary Washing Feed PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**500**	66.30	100.00	24.00	39.70	14.90	1.10	2.00	0.80	0.70	0.30	1.10	0.10	0.20	13.00
500	**38**	25.30	33.70	28.70	43.30	10.10	0.50	1.30	0.60	0.40	0.30	1.00	0.10	0.20	11.40
38	**0**	8.40	8.40	13.00	24.60	31.90	1.30	5.60	2.50	1.60	0.20	1.00	0.40	0.40	14.80

Table 13.28: Blended Lower and Upper Zone Rotary Washing Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**500**	56.40	100.00	24.00	40.00	14.80	1.00	1.80	0.80	0.60	0.20	1.20	0.10	0.20	12.60
500	**38**	31.30	43.60	30.20	44.00	9.50	0.50	1.00	0.50	0.40	0.50	1.10	0.00	0.20	10.40
38	**0**	12.20	12.20	12.60	24.00	33.20	1.30	5.70	2.50	1.60	0.30	1.00	0.40	0.30	14.60

For the milled product obtained from the combined rotary washing and pH adjustment process, a milling time of 22 minutes was used to achieve the target particle size distribution (P95-98 of 300 microns). The mill batch, prepared by adjusting 10 kg of dry solids to 60% solids at pH 11.5 using a 10% NaOH solution in a laboratory rod mill, was analyzed, as detailed in Table 13.29.

Table 13.29: Blended Lower and Upper Zone Rotary Washing High pH Mill Product

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
500	**300**	3.70	100.00	25.50	41.40	13.00	1.10	1.50	0.68	0.58	0.29	1.20	0.10	0.15	12.00
300	**212**	12.80	96.30	26.80	42.70	11.20	0.95	1.20	0.57	0.48	0.28	1.20	0.07	0.15	11.90
212	**150**	16.10	83.50	27.60	43.30	10.00	0.87	1.40	0.48	0.42	0.29	1.10	0.06	0.15	11.90
150	**106**	16.30	67.30	28.20	43.80	9.80	0.76	0.91	0.47	0.41	0.27	1.10	0.05	0.15	11.60
106	**90**	4.20	51.00	27.90	43.50	10.00	0.81	1.20	0.63	0.42	0.27	1.00	0.06	0.15	11.80
90	**75**	1.30	46.80	24.80	40.70	13.50	1.00	1.50	0.73	0.57	0.22	1.20	0.10	0.16	14.50
75	**53**	3.00	45.50	23.90	40.00	15.00	1.10	1.60	0.75	0.62	0.24	1.10	0.10	0.16	13.30
53	**45**	10.70	42.60	26.60	42.60	12.10	0.97	1.20	0.62	0.46	0.23	1.00	0.07	0.15	11.80
45	**38**	3.40	31.90	21.50	37.30	19.60	1.20	1.80	0.90	0.69	0.22	0.97	0.13	0.15	12.80
38	**0**	28.50	28.50	16.50	32.00	22.50	1.70	3.60	2.10	1.10	0.24	1.20	0.27	0.23	15.50
Cumulative		**100.00**		**23.90**	**39.60**	**14.50**	**1.10**	**1.90**	**1.00**	**0.64**	**0.26**	**1.10**	**0.12**	**0.17**	**13.00**

13.2.4.2.4 Benchtop Tests

Flotation tests were conducted on the fine 150x38 micron stream and the coarse 300x150 micron stream. The fine stream underwent two-stage reverse flotation, while only one reverse flotation stage was used for the coarse stream, targeting the removal of dolomitic impurities using a fatty acid collector (CustoFloat 520). The results of the benchtop flotation tests for the rotary washed and milled product are summarized in Table 13.30.

Table 13.30: Rotary Washing Pre-Milling Treatment Option Benchtop Tests

Test Number	Feed Type	Size Range	Reagents and Scrub Conditions	Dosages (g/t) / Acid Used / Addition Sequence / pH Measured	Sample ID	Chemical Analysis (wt. %)							Distribution (wt. %)			
						P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	LOI	Mass	P_2O_5	MgO	SiO_2
Upper Zone																
27	Upper Zone	150x38µm	CustoFloat 520	498	MgO Float	6.60	46.30	6.70	2.10	1.90	0.30	34.50	8.40	2.00	41.80	5.30
			CA1507	150	Amine Float	14.60	23.40	39.90	0.26	4.00	1.30	11.40	4.50	2.40	2.70	17.00
			Rotary Wash & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	30.80	45.70	9.50	0.27	0.91	0.42	8.50	87.10	95.70	55.50	77.70
			(pH =5.0 for CF520, no regulation for CA1507, measured 6.2-6.4)		Calculated Feed	28.00	44.70	10.60	0.43	1.10	0.45	10.80	100.00	100.00	100.00	100.00
28	Upper Zone	150x38µm	CustoFloat 520	721	MgO Float	9.70	47.30	6.40	1.90	1.70	0.25	31.30	15.30	5.30	69.50	9.10
			CA1507	144	Amine Float	19.60	29.70	33.70	0.17	4.00	1.00	8.60	16.60	11.60	6.60	51.90
			Rotary Wash & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	34.10	48.30	6.20	0.15	0.55	0.28	7.50	68.10	83.10	23.90	39.00
			(pH =5.0 for CF520, no regulation for CA1507, measured 6.2-6.4)		Calculated Feed	28.00	45.00	10.80	0.43	1.30	0.40	11.30	100.00	100.00	100.00	100.00
29	Upper Zone (Coarse)	300x150µm	CustoFloat 520	480	MgO Float	12.90	49.00	6.90	1.80	1.00	0.46	32.20	15.50	6.70	59.20	14.00
			Rotary Wash & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	32.90	46.60	7.70	0.22	0.83	0.38	7.70	84.50	93.30	40.80	86.00
			(pH =5.0 for CF520)		Calculated Feed	29.80	46.90	7.60	0.47	0.86	0.39	11.50	100.00	100.00	100.00	100.00
30	Upper Zone (Coarse)	300x150µm	CustoFloat 520	730	MgO Float	18.70	48.10	6.90	1.30	0.97	0.34	21.40	20.30	12.60	60.70	17.90
			Rotary Wash & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	33.00	45.60	8.10	0.21	0.79	0.38	10.30	79.70	87.40	39.30	82.10
			(pH =5.0 for CF520)		Calculated Feed	30.10	46.10	7.90	0.43	0.83	0.37	12.60	100.00	100.00	100.00	100.00
31	Upper Zone (Coarse)	300x150µm	CustoFloat 520	628	MgO Float	14.70	48.60	6.90	1.70	1.00	0.43	26.70	14.30	7.00	58.10	12.70
			Rotary Wash & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	32.70	46.30	7.90	0.21	0.81	0.39	7.90	85.70	93.00	41.90	87.30
			(pH =5.0 for CF520)		Calculated Feed	30.10	46.60	7.80	0.43	0.84	0.40	10.60	100.00	100.00	100.00	100.00

Table 13.30: Rotary Washing Pre-Milling Treatment Option Benchtop Tests, cont.

Test Number	Feed Type	Size Range	Reagents and Scrub Conditions	Dosages (g/t) / Acid Used / Addition Sequence / pH Measured	Sample ID	Chemical Analysis (wt. %)							Distribution (wt. %)			
						P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	LOI	Mass	P_2O_5	MgO	SiO_2
Lower Zone																
32	Lower Zone	150x38µm	CustoFloat 520	500	MgO Float	5.90	37.90	9.50	6.50	1.10	0.49	34.30	10.90	2.40	59.80	8.50
			CA1507	150	Amine Float	20.00	29.40	36.80	0.32	2.00	0.91	8.90	5.90	4.50	1.60	17.70
			Rotary Wash & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	29.50	43.70	10.90	0.55	0.91	0.50	9.90	83.20	93.10	38.60	73.90
			(pH =5.0 for CF520, no regulation for CA1507, measured 6.2-6.4)		Calculated Feed	26.40	42.20	12.30	1.20	1.00	0.52	12.50	100.00	100.00	100.00	100.00
33	Lower Zone (Coarse)	300x150µm	CustoFloat 520	628	MgO Float	4.90	40.70	9.90	6.30	1.40	0.38	36.00	7.10	1.30	40.80	6.80
			Rotary Wash & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	29.10	43.10	10.40	0.70	1.10	0.57	10.40	92.90	98.70	59.20	93.20
			(pH =5.0 for CF520)		Calculated Feed	27.40	43.00	10.40	1.10	1.10	0.55	12.20	100.00	100.00	100.00	100.00
34	Lower Zone (Coarse)	300x150µm	CustoFloat 520	750	MgO Float Cleaner O/F	14.40	41.40	8.50	4.70	1.30	0.71	26.20	12.50	6.60	53.80	10.40
					MgO Float Cleaner U/F	29.80	44.10	9.10	0.69	0.91	0.55	10.10	1.10	1.20	0.70	1.00
			Rotary Wash & Mill Product		MgO Rougher NonFloat	29.30	43.00	10.60	0.57	1.30	0.53	11.50	86.30	92.20	45.50	88.60
					Comb. Ro. U/F & Cl. U/F	29.30	43.00	10.60	0.58	1.30	0.53	11.50	87.50	93.40	46.20	89.60
			(Add.H_3PO_4 before CustoFloat520) pH = 5.0		Calculated Feed	27.40	42.80	10.30	1.10	1.30	0.56	13.30	100.00	100.00	100.00	100.00
35	Lower Zone	150x38µm	CustoFloat 520	750	MgO Float Cleaner O/F	16.90	41.70	9.50	4.20	1.00	0.54	22.70	18.70	12.00	64.30	14.70
					MgO Float Cleaner U/F	20.50	37.10	17.90	2.50	1.80	0.76	14.90	5.30	4.10	10.90	7.90
			Rotary Wash & Mill Product		MgO Rougher NonFloat	29.10	42.70	12.30	0.40	1.10	0.57	9.60	76.00	83.90	24.80	77.40
					Comb. Ro. U/F & Cl. U/F	28.50	42.30	12.70	0.54	1.20	0.58	9.90	81.30	88.00	35.70	85.30
			(Add.H_3PO_4 before CustoFloat520) pH = 5.0		Calculated Feed	26.40	42.20	12.10	1.20	1.10	0.57	12.30	100.00	100.00	100.00	100.00

The results showed that by using neutral pH rotary washing prior to milling, without additional pH adjustment or scrubbing on the milled product, the target product grades and recoveries were achieved. For the upper zone fine flotation feed, two-stage flotation tests (27 and 28) resulted in concentrate $P_2O_5$5 grades of approximately 30.8% at phosphate recoveries of nearly 95%, using 500g/ton of fatty acid followed by 150g/ton of CA1507 amine collector. Conversely, tests 29-31 conducted on the coarse size fraction produced P_2O_5 grades in the high 32% range at apatite recoveries of 93%.

Similar testing on the lower zone showed slightly lower P_2O_5 concentrate grades of approximately 29% at apatite recoveries of nearly 93% for the fine fraction (tests 32 and 35) and tests 33 and 34 for the coarse fraction.

In a combined upper and lower zone test for each split-feed size fraction, tests yielded a final fine particle flotation concentrate grade of 31.5% P_2O_5 at a recovery of 90.5%. Additionally, it achieved a coarse particle flotation concentrate grade of 32.0% P_2O_5 at a recovery of 95.3%.

Tests were performed on lower and upper zone feedstocks independently as well as on a combined feedstock. The results showed that targeted product grades and recoveries could be achieved with attrition scrubbing at a neutral pH prior to milling, without the need for additional pH adjustment or scrubbing on the milled product.

Tests performed on the upper zone fine flotation feed resulted in concentrate P_2O_5 grades greater than 31% at apatite recoveries ranging from 80% to 90%. These tests utilized 475 to 520 g/ton of fatty acid for dolomite flotation, followed by nearly 150 g/ton of amine for SiO_2 flotation. Another test, on the coarse size fraction, yielded a concentrate P_2O_5 grade of 31.8% at a recovery of 94.4% using 730 g/ton of fatty acid.

For the lower zone fine flotation testing, P_2O_5 concentrate grades of around 30% were achieved at recoveries of approximately 90%, with fatty acid and amine dosages of 500 and 150 g/ton, respectively. The lower zone coarse flotation feed achieved a P_2O_5 grade of 32% with a recovery of 83% using 657 g/ton of fatty acid.

Combined upper and lower zone tests were conducted for each feed size fraction. A test performed on the combined upper and lower fine flotation stream, yielded a final concentrate grade of 33.5% P_2O_5 at a recovery of 93%. Another test, conducted on the combined upper and lower zone coarse flotation stream, produced a concentrate grade of 32% P_2O_5 at a recovery of 92.8%. The results of the benchtop flotation tests for the attrition scrubbed product are summarized in Table 13.31.

Table 13.31: Attrition Scrubbing Pre-Milling Treatment Option Benchtop Tests

Test Number	Feed Type	Size Range	Reagents and Scrub Conditions	Dosages (g/t) / Acid Used / Addition Sequence / pH Measured	Sample ID	Chemical Analysis (wt. %)							Distribution (wt. %)			
						P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	LOI	Mass	P_2O_5	MgO	SiO_2
Upper Zone																
36	Upper Zone	150x38µm	CustoFloat 520	520	MgO Float	15.40	44.60	6.70	1.30	1.10	0.46	26.70	12.80	7.20	33.60	8.00
			CA1507	160	Amine Float	17.70	28.60	34.40	0.45	4.30	1.40	8.90	13.80	8.90	12.50	44.40
			Scrub & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	31.50	46.90	6.90	0.36	0.61	0.33	9.30	73.40	84.00	53.90	47.50
			(pH =5.0 for CF520, no regulation for CA1507, measured 6.2-6.4)		Calculated Feed	27.50	44.10	10.70	0.49	1.20	0.50	11.50	100.00	100.00	100.00	100.00
37	Upper Zone (Coarse)	300x150µm	CustoFloat 520	480	MgO Float	9.90	46.00	8.00	1.80	0.82	0.49	29.20	4.00	1.40	14.40	3.50
			Scrub & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	29.40	45.60	9.20	0.46	1.00	0.44	10.20	96.00	98.60	85.60	96.50
			(pH =5.0 for CF520)		Calculated Feed	28.60	45.60	9.10	0.51	1.00	0.44	10.90	100.00	100.00	100.00	100.00
38	Upper Zone (Coarse)	300x150µm	CustoFloat 520	730	MgO Float	10.60	47.70	7.00	2.00	1.20	0.60	26.10	15.20	5.60	62.80	11.50
			Scrub& Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	31.80	45.10	9.60	0.21	0.99	0.41	8.20	84.80	94.40	37.20	88.50
			(pH =5.0 for CF520)		alculated Fee	28.60	45.50	9.20	0.48	1.00	0.44	10.90	100.00	100.00	100.00	100.00
39	Upper Zone	150x38µm	CustoFloat 520	500	MgO Float	11.60	46.60	6.50	1.70	0.84	0.35	26.50	19.20	8.10	70.70	11.60
			CA1507	200	Amine Float	20.80	27.40	32.90	0.20	3.90	1.40	8.80	16.70	12.60	7.20	50.50
			Scrub & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	34.10	47.90	6.40	0.16	0.57	0.29	7.80	64.10	79.30	22.10	37.90
			(pH =5.0 for CF520, no regulation for CA1507, measured 6.2-6.4)		Calculated Feed	27.50	44.20	10.80	0.47	1.20	0.49	11.60	100.00	100.00	100.00	100.00
40	Upper Zone	150x38µm	CustoFloat 520	480	MgO Float	4.80	47.40	4.20	2.60	0.76	0.12	37.40	12.10	2.10	63.50	4.70
			CA1507	145	Amine Float	15.30	24.70	36.40	0.35	5.90	1.80	8.42	11.20	6.20	8.10	37.70
			Scrub & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	32.90	46.60	8.20	0.18	0.56	0.35	8.08	76.70	91.70	28.30	57.70
			(pH =5.0 for CF520, no regulation for CA1507, measured 6.2-6.4)		Calculated Feed	27.50	44.20	10.90	0.48	1.20	0.49	11.70	100.00	100.00	100.00	100.00
41	Upper Zone	150x38µm	CustoFloat 520	475	MgO Float	4.60	47.70	4.80	2.70	0.73	0.16	38.00	8.40	1.40	46.30	3.70
			CA1507	150	Amine Float	16.80	25.50	34.20	0.36	5.90	1.60	8.90	10.70	6.50	8.10	33.70
			Scrub & Mill Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	31.30	46.30	8.40	0.27	0.62	0.40	9.00	80.90	92.10	45.60	62.60
			(pH =5.0 for CF520, no regulation for CA1507, measured 6.2-6.4)		Calculated Feed	27.50	44.20	10.80	0.48	1.20	0.50	11.40	100.00	100.00	100.00	100.00

Table 13.31: Attrition Scrubbing Pre-Milling Treatment Option Benchtop Tests cont.

Test Number	Feed Type	Size Range	Reagents and Scrub Conditions	Dosages (g/t) / Acid Used / Addition Sequence / pH Measured	Sample ID	Chemical Analysis (wt. %)							Distribution (wt. %)			
						P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	LOI	Mass	P_2O_5	MgO	SiO_2
Combined Upper Zone (Coarse : Fine Mass Raio=16.6663:17.55665) and Lower Zone (Coarse : Fine Mass Ratio=16.2946:19.04754) (Upper Zone:Lower Zone Mass Ratio=41.6%:58.4%)																
Comb. 38 &45	Comb. Upper and Lower	300x150µm			MgO Float	10.40	41.70	9.40	4.20	1.90	0.65	28.00	15.50	5.90	67.70	13.50
					MgO NonFloat Conc.	30.50	43.60	11.00	0.34	1.20	0.48	9.40	84.50	94.10	32.30	86.50
					Calculated Feed	27.40	43.30	10.70	0.95	1.30	0.51	12.30	100.00	100.00	100.00	100.00
Combined Upper Zone (Coarse : Fine Mass Raio=16.6663:17.55665) and Lower Zone (Coarse : Fine Mass Ratio=16.2946:19.04754) (Upper Zone:Lower Zone Mass Ratio=41.6%:58.4%)																
Comb. 40 & 47	Comb. Upper and Lower	150x38µm			MgO Float	6.30	47.40	4.70	4.60	0.90	0.17	35.50	10.00	2.30	49.60	3.90
					Amine Float	13.30	25.60	38.60	1.80	5.70	1.60	9.90	10.60	5.30	16.90	34.30
					Final Product	30.90	44.10	9.30	0.41	0.78	0.46	10.10	79.40	92.40	33.50	61.80
					Calculated Feed	26.60	42.50	12.00	0.98	1.30	0.55	12.60	100.00	100.00	100.00	100.00
Combined Upper Zone (Coarse : Fine Mass Raio=16.6663:17.55665) and Lower Zone (Coarse : Fine Mass Ratio=16.2946:19.04754) (Upper Zone:Lower Zone Mass Ratio=41.6%:58.4%)																
Comb. 38, 40, 45, and 47	Comb. Upper and Lower	300x38µm			MgO Float	8.20	44.70	7.00	4.40	1.40	0.40	32.00	12.60	4.00	58.10	8.40
					Amine Float	13.30	25.60	38.60	1.80	5.70	1.60	9.94	5.60	2.80	8.90	18.10
					Final Product	30.70	43.90	10.10	0.38	0.96	0.47	9.80	81.80	93.20	33.00	73.50
					Calculated Feed	26.90	43.00	11.30	0.97	1.30	0.52	12.60	100.00	100.00	100.00	100.00
Comb. 38, 40, 45, and 47	Comb. Upper and Lower	300x38µm			MgO Float	8.20	44.70	7.00	4.40	1.40	0.40	32.00	12.60	4.00	58.10	8.40
				Comb. SiO_2 Float with Final Conc.	Comb. MgO NonFloat Conc	29.60	42.70	11.90	0.47	1.30	0.54	9.81	87.40	96.00	41.90	91.60
					Calculated Feed	26.90	43.00	11.30	0.97	1.30	0.52	12.60	100.00	100.00	100.00	100.00
Attrition Scrubbed & Milled Upper Zone and Lower Zone Combined																
50	Combined Upper and Lower Zones	150x38µm	CustoFloat 520	500	MgO Float	4.90	48.70	4.40	4.10	1.30	0.14	34.90	18.60	3.50	81.90	7.40
			CA1507	150	Amine Float	10.60	19.30	52.30	0.34	6.70	2.60	6.20	8.90	3.60	3.20	41.90
			High pH Mill. Product	(Add.H_3PO_4 before CustoFloat520)	Final Product	33.50	45.80	7.70	0.19	0.55	0.36	7.95	72.60	92.90	14.90	50.70
					Comb. MgO NonFloat	31.00	42.90	12.60	0.21	1.20	0.60	7.76	81.40	96.50	18.10	92.60
			(pH =5.0 for CF520, no regulation for CA1507, measured 6.2-6.4)		Calculated Feed	26.20	44.00	11.10	0.93	1.20	0.51	12.80	100.00	100.00	100.00	100.00
51	Comb. Upper and Lower	300x150µm	CustoFloat 520	500	MgO Float	10.10	47.70	6.30	3.30	3.00	0.71	26.40	19.80	7.20	75.30	13.00
			(pH =5.0 for CF520)		MgO NonFloat Conc.	32.30	45.10	10.30	0.27	0.78	0.41	9.11	80.20	92.80	24.70	87.00
					Calculated Feed	28.00	45.60	9.50	0.86	1.20	0.47	12.50	100.00	100.00	100.00	100.00

13.2.4.2.5 Bulk Processing

After completing the rotary washing and attrition scrubbing milling studies, both methods produced targeted final concentrates meeting product grade requirements. However, due to the excess slimes generated with the attrition scrubbing method and the associated reagent costs of adjusting pH conditions for scrubbing and flotation, bulk processing of material was carried out using a neutral pH for both rotary washing and milling.

13.2.4.2.5.1 Rotary Washing

The lower zone and upper zone ores were blended at a weight split of 58.4% lower zone and 41.6% upper zone. Rotary washing was performed on 30 kg batches for 10 minutes at 65% solids by weight. The rotary washed product was wet screened at 500 microns, with the oversize (plus 500-micron) fraction being rod milled. The undersize (minus 38-micron) fraction was classified at 38 microns via wet screening to produce a natural product stream of 500x38 microns, while the minus 38-micron fraction was rejected as natural slimes. Within the circuit, 57% by weight of the rotary washing stream reported to the mill as the plus 500-micron size fraction, while 43% by weight reported to deslime classification.

Of the total feed to the circuit, 32.1% reported to the 500x38 micron rotary washed product stream, and 10.8% was discarded as rotary wash slimes (38x0 microns). The natural product stream recovered 38.1% of the global phosphate distribution, with a P_2O_5 grade of 29.2%, SiO_2 grade of 9.4%, and MgO grade of 0.47%. Additionally, 5.5% of the global phosphate distribution, with a P_2O_5 grade of 12.6%, was rejected to the rotary wash slimes fraction. Particle size distributions and chemical analyses of the circuit feed and rotary wash products are provided in Table 13.32, Table 13.33, Table 13.34, and Table 13.35.

Table 13.32: Bulk Processing Rotary Washing Feed PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**500**	66.30	100.00	24.00	39.70	14.90	1.10	2.00	0.80	0.70	0.30	1.10	0.10	0.20	13.00
500	**38**	25.30	33.70	28.70	43.30	10.10	0.50	1.30	0.60	0.40	0.30	1.00	0.10	0.20	11.40
38	**0**	8.40	8.40	13.00	24.60	31.90	1.30	5.60	2.50	1.60	0.20	1.00	0.40	0.40	14.80

Table 13.33: Bulk Processing Rotary Washing Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**500**	55.90	100.00	24.10	39.70	14.70	1.10	1.90	0.80	0.60	0.50	1.10	0.10	0.20	12.90
500	**38**	31.70	44.10	29.60	44.50	9.10	0.50	1.00	0.50	0.40	0.50	1.10	0.00	0.20	10.60
38	**0**	12.30	12.30	12.70	24.10	32.50	1.30	5.60	2.50	1.60	0.30	1.00	0.40	0.40	15.30

Table 13.34: Rotary Washing Product 500x38 Micron Natural Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
500	**300**	27.90	100.00	30.40	45.90	8.00	0.54	0.70	0.45	0.35	0.50	1.10	0.04	0.14	9.90
300	**212**	14.60	72.10	31.60	46.80	6.70	0.46	0.59	0.34	0.28	0.51	1.10	0.02	0.14	9.70
212	**150**	14.60	57.50	31.50	46.60	6.60	0.43	0.54	0.37	0.27	0.50	1.10	0.01	0.15	10.40
150	**106**	14.00	42.90	31.20	46.20	6.50	0.47	0.60	0.36	0.28	0.43	1.10	0.01	0.16	11.30
106	**90**	4.20	28.90	31.80	45.90	6.60	0.47	0.72	0.36	0.28	0.49	1.00	0.02	0.16	11.50
90	**75**	6.90	24.80	29.80	45.40	8.60	0.54	0.77	0.45	0.35	0.40	1.00	0.04	0.17	11.90
75	**53**	6.50	17.90	26.90	42.40	12.60	0.66	0.92	0.54	0.46	0.37	0.98	0.09	0.17	12.30
53	**45**	1.80	11.40	23.80	39.30	18.40	0.78	1.30	0.60	0.59	0.29	0.91	0.09	0.17	12.60
45	**38**	3.60	9.60	20.60	35.30	24.60	0.76	1.70	0.69	0.74	0.29	0.82	0.15	0.17	12.00
38	**0**	6.00	6.00	16.60	29.50	28.90	1.00	3.50	1.60	1.10	0.31	0.91	0.31	0.26	14.60
Cumulative		**100.00**		**29.30**	**44.40**	**9.70**	**0.54**	**0.88**	**0.49**	**0.39**	**0.45**	**1.10**	**0.05**	**0.16**	**10.90**

Table 13.35: Rotary Washing Product 38x0 Micron Slimes Head Grade

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
38	**0**	100.00	100.00	12.60	23.80	31.80	1.20	5.60	2.40	1.60	0.32	1.00	0.42	0.35	16.40

13.2.4.2.5.2 Bulk Milling

After the bulk milling and classification process, the 500-micron screen oversize from the rod mill was blended and split into 10 kg batches. Based on the benchtop phase studies, the material was rod milled at 60% solids for 22 minutes and wet screened at 150 microns. However, due to the presence of excess coarse material, the 150-micron screen oversize was further ground for an additional 19 minutes to achieve a mill product P95 of 300 microns. The milled product was wet screened at 150 microns, and the oversize was blended into HydroFloat feed batches. The 150-micron screen undersize was blended and screened at 38 microns to produce the column flotation feed.

After the completion of bulk milling and classification, it was found that 18.5% of the initial feedstock to the rotary washing circuit reported as coarse HydroFloat flotation feed, 24.1% as fine column flotation feed, and 14.5% as discarded slimes. The remaining weight percentages of the parent sample were distributed between the rotary washed natural products and natural slimes that did not undergo milling and further classification. The particle size and oxide distributions for the mill feed, milled product, coarse and fine flotation feedstocks, and slimes discard can be found in Table 13.36, Table 13.37, Table 13.38, Table 13.39, and Table 13.40.

Table 13.36: Combined Bulk Mill Feed PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
4000	**2360**	44.50	100.00	22.70	38.30	16.50	1.30	2.20	0.88	0.70	0.51	1.10	0.15	0.18	13.40
2360	**2000**	12.30	55.50	23.40	39.50	14.90	1.20	1.90	0.84	0.67	0.45	1.10	0.13	0.20	13.40
2000	**1180**	18.10	43.20	24.00	39.50	14.80	1.10	1.90	0.82	0.66	0.46	1.10	0.13	0.18	13.20
1180	**8503**	10.50	25.00	25.90	41.20	12.50	0.93	1.60	0.71	0.55	0.51	1.10	0.10	0.16	12.00
8503	**500**	10.90	14.50	27.80	43.00	10.70	0.71	1.30	0.59	0.48	0.53	1.10	0.08	0.16	11.20
500	**0**	3.60	3.60	27.00	41.30	12.80	0.61	1.80	0.67	0.55	0.53	1.00	0.11	0.17	11.50
Cumulative		**100.00**		**24.10**	**39.60**	**14.80**	**1.10**	**2.00**	**0.81**	**0.65**	**0.50**	**1.10**	**0.13**	**0.18**	**12.90**

Table 13.37: Combined Bulk Mill Product PSD

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
500	**300**	3.70	100.00	27.50	43.50	11.00	1.10	1.20	0.56	0.47	0.60	1.20	0.07	0.15	11.60
300	**212**	11.50	96.30	28.80	44.70	9.70	0.95	1.00	0.48	0.42	0.90	0.84	0.05	0.14	11.20
212	**150**	14.60	84.80	28.70	44.50	9.50	0.87	1.10	0.50	0.40	0.70	1.30	0.05	0.15	11.30
150	**106**	3.90	70.20	28.30	44.00	10.10	0.85	1.00	0.52	0.42	0.72	1.30	0.07	0.15	11.70
106	**90**	19.80	66.40	28.00	43.80	10.50	0.78	1.10	0.52	0.44	0.47	0.75	0.06	0.15	11.80
90	**75**	5.30	46.60	26.00	42.80	11.80	0.91	0.98	0.59	0.48	0.59	1.00	0.09	0.15	12.20
75	**53**	7.10	41.40	25.40	41.40	14.00	0.89	1.00	0.63	0.55	0.37	1.00	0.09	0.15	12.60
53	**45**	2.20	34.20	22.90	38.80	17.80	1.00	1.40	0.73	0.66	0.40	1.00	0.11	0.15	13.00
45	**38**	3.80	32.00	20.80	36.80	21.30	1.10	1.70	0.80	0.74	0.36	0.96	0.15	0.16	13.10
38	**0**	28.30	28.30	16.30	31.50	23.40	1.50	3.80	1.90	1.10	0.66	1.40	0.27	0.25	16.10
Cumulative		**100.00**		**24.20**	**39.90**	**14.80**	**1.10**	**1.90**	**0.94**	**0.65**	**0.61**	**1.10**	**0.13**	**0.18**	**13.00**

Table 13.38: Classified Mill Product 500x150 Microns PSD - HydroFloat Feed

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
500	**300**	11.40	100.00	27.50	43.50	11.00	1.10	1.20	0.56	0.47	0.60	1.20	0.07	0.15	11.60
300	**212**	35.10	88.60	28.80	44.70	9.70	0.95	1.00	0.48	0.42	0.90	0.84	0.05	0.14	11.20
212	**150**	44.70	53.50	28.70	44.50	9.50	0.87	1.10	0.50	0.40	0.70	1.30	0.05	0.15	11.30
150	**0**	8.80	8.80	28.10	43.80	10.20	0.87	1.10	0.52	0.43	0.65	1.30	0.07	0.15	11.70
Cumulative		**100.00**		**28.50**	**44.40**	**9.80**	**0.92**	**1.10**	**0.50**	**0.42**	**0.76**	**1.10**	**0.05**	**0.14**	**11.30**

Table 13.39: Classified Mill Product 150x38 Microns PSD - Column Feed

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
150	**106**	30.80	100.00	28.60	44.20	9.60	0.71	0.74	0.47	0.40	0.45	1.10	0.06	0.15	11.50
106	**90**	14.60	69.20	28.30	43.90	10.00	0.75	0.95	0.50	0.43	0.43	1.10	0.06	0.15	12.00
90	**75**	16.50	54.50	27.60	43.20	11.00	0.79	1.20	0.55	0.45	0.46	1.10	0.06	0.15	12.80
75	**53**	17.00	38.00	25.70	41.70	13.50	0.95	1.10	0.60	0.53	0.42	1.00	0.08	0.15	12.40
53	**45**	6.40	21.00	23.20	39.30	17.40	1.10	1.50	0.69	0.63	0.42	0.99	0.10	0.15	12.90
45	**38**	6.80	14.60	21.30	37.40	20.70	1.20	1.70	0.75	0.71	0.41	0.96	0.14	0.15	13.20
38	**0**	7.80	7.80	18.90	34.80	23.80	1.30	2.10	0.96	0.83	0.41	0.94	0.22	0.16	13.50
Cumulative		**100.00**		**26.30**	**42.10**	**12.90**	**0.87**	**1.10**	**0.58**	**0.50**	**0.44**	**1.00**	**0.08**	**0.15**	**12.30**

Table 13.40: Classified Mill Product 38x0 Microns Head - Discarded Slimes

Particle Size (µm)		Wt. Dist. (%)		Assay (wt. %)											
Passing	Retained	Indv.	Cml. Pass	P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	K_2O	Na_2O	Sulf	TiO_2	Zn	LOI
38	**0**	100.00	100.00	16.20	31.60	23.40	1.50	3.60	2.00	1.10	0.49	1.30	0.29	0.25	16.40

13.2.4.2.5.3 HydroFloat Flotation Testing

Benchtop Tests

Benchtop flotation tests were conducted on the blended HydroFloat feed to establish initial flotation chemistry for the HydroFloat testing program. Initially, the tests were analyzed using inductively coupled plasma (ICP) due to XRF maintenance. However, the benchtop tests were later re-run via XRF. The ICP assay values differed slightly from the XRF-produced results but were deemed close enough to be compatible and to carry on with the test program. The differences in ICP and XRF data were attributed to the incomplete dissolution of organics during acid digestion prior to ICP analyses. The benchtop flotation tests, with XRF analysis, are presented in Table 13.41.

Table 13.41: HydroFloat Benchtop Tests

Test Number	Feed Type	Size Range	Reagents and Scrub Conditions	Dosages (g/t) Acid Used Addition Sequence pH Measured	Sample ID	Chemical Analysis (wt. %)							Distribution (wt. %)			
						P_2O_5	CaO	SiO_2	MgO	Al_2O_3	Fe_2O_3	LOI	Mass	P_2O_5	MgO	SiO_2
58	Comb.	Bulk	CustoFloat 520	750	MgO Float	8.00	44.00	8.00	4.20	1.30	0.49	32.90	7.50	2.10	32.20	6.00
	Upper	HydroFloat Feed	(pH =5.0 for CF520)		MgO NonFloat Conc.	30.30	44.70	10.10	0.71	1.20	0.51	9.60	92.50	97.90	67.80	94.00
	Lower	300x150µm			Calculated Feed	28.60	44.70	10.00	0.97	1.20	0.51	11.30	100.00	100.00	100.00	100.00
59	Comb.	Bulk	CustoFloat 520	500	MgO Float	19.10	32.60	17.80	1.50	3.10	1.60	18.40	1.90	1.20	2.90	3.30
	Upper	HydroFloat Feed	(pH =5.0 for CF520)		MgO NonFloat Conc.	28.60	44.60	9.90	0.93	1.00	0.47	11.20	98.10	98.80	97.10	96.70
	Lower	300x150µm			Calculated Feed	28.40	44.40	10.00	0.94	1.10	0.49	11.30	100.00	100.00	100.00	100.00
60	Comb.	Bulk	CustoFloat 520	1000	MgO Float	9.70	43.70	8.40	3.90	0.94	0.52	30.90	8.90	3.00	39.40	7.90
	Upper	HydroFloat Feed	(pH =5.0 for CF520)		MgO NonFloat Conc.	30.40	44.70	9.60	0.59	1.00	0.48	9.80	91.10	97.00	60.60	92.10
	Lower	300x150µm			Calculated Feed	28.60	44.60	9.40	0.89	1.00	0.48	11.70	100.00	100.00	100.00	100.00
61	Comb.	Bulk	CustoFloat 520	1250	MgO Float	18.00	45.50	7.30	2.70	0.59	0.42	22.70	14.90	9.40	48.50	11.40
	Upper	HydroFloat Feed	(pH =5.0 for CF520)		MgO NonFloat Conc.	30.30	44.10	9.90	0.51	1.10	0.49	9.60	85.10	90.60	51.50	88.60
	Lower	300x150µm			Calculated Feed	28.50	44.30	9.50	0.84	1.00	0.48	11.60	100.00	100.00	100.00	100.00
62	Comb.	Bulk	CustoFloat 520	1150	MgO Float	17.00	45.50	7.30	2.70	0.90	0.45	23.80	13.10	7.80	42.50	10.20
	Upper	HydroFloat Feed	(pH =5.0 for CF520)		MgO NonFloat Conc.	30.30	44.40	9.70	0.55	0.98	0.48	10.50	86.90	92.20	57.50	89.80
	Lower	300x150µm			Calculated Feed	28.60	44.50	9.40	0.83	0.97	0.47	12.20	100.00	100.00	100.00	100.00
63	Comb.	Bulk	CustoFloat 520	1500	MgO Float	11.00	42.80	8.80	2.40	1.30	0.61	30.00	6.50	2.50	18.00	6.00
	Upper	HydroFloat Feed	(pH =5.0 for CF520)		MgO NonFloat Conc.	29.60	44.60	9.50	0.76	0.78	0.48	10.40	93.50	97.50	82.00	94.00
	Lower	300x150µm			Calculated Feed	28.40	44.50	9.50	0.87	0.81	0.49	11.70	100.00	100.00	100.00	100.00
64	Comb.	Bulk	CustoFloat 520	2000	MgO Float	12.30	42.60	9.00	2.80	1.30	0.68	28.20	8.80	3.80	27.80	8.50
	Upper	HydroFloat Feed	(pH =5.0 for CF520)		MgO NonFloat Conc.	29.90	44.80	9.40	0.70	1.10	0.44	10.00	91.20	96.20	72.20	91.50
	Lower	300x150µm			Calculated Feed	28.40	44.60	9.30	0.88	1.10	0.46	11.60	100.00	100.00	100.00	100.00
65	Comb.	Bulk	CustoFloat 520 (pH5.5-6.5)	1000	MgO Float	14.50	43.50	8.60	2.90	1.20	0.61	26.00	8.80	4.50	27.20	7.80
	Upper	HydroFloat Feed	CA1507A Amine (pH5.5-6.5)	150	MgO NonFloat Conc.	29.50	44.40	9.80	0.74	1.10	0.48	11.00	91.20	95.50	72.80	92.20
	Lower	300x150µm			Calculated Feed	28.20	44.30	9.70	0.93	1.10	0.50	12.30	100.00	100.00	100.00	100.00

Benchtop flotation tests were conducted on the HydroFloat feed to determine the initial flotation chemistry. A total of eight tests were performed, varying the dosage of fatty acid collector. It was observed that using 750-1250 g/ton fatty acid resulted in phosphate concentrate grades of around 30% with recovery rates ranging from 90% to 97%. Lower and higher dosages yielded lower grades.

13.2.4.2.5.4 HydroFloat Optimization Testing

HydroFloat testing was carried out using a 6-inch diameter laboratory-scale test unit. The coarse feed material was conditioned in an intense energy stirred tank, allowing for efficient dispersion of the fatty acid collector. A bench-scale vibratory feeder metered the feed to the HydroFloat separator, with makeup water added to maintain a solids content of approximately 40% to 50% by weight.

The HydroFloat technology combines flotation and hindered-bed separation, enabling the flotation of larger particles. A fluidized bed reduces turbulence and detachment while enhancing the flotation rate of coarse material. Steady-state conditions were achieved before representative samples were obtained for assay. Underflow and overflow samples were collected simultaneously to perform size-by-size analyses of both products. Feed samples were taken throughout the evaluation to account for variations in head grade and particle size distribution. The samples were dried, weighed, and chemically analyzed to determine mass yield and composition. Particle size distribution analysis and chemical composition were also conducted on selected samples.

The HydroFloat tests involved varying reagent rates and operating conditions to establish the grade and recovery characteristics associated with different parameters.

Initial HydroFloat tests were analyzed using ICP while XRF maintenance was performed. The tests were reanalyzed using the XRF. To keep assay reporting consistent, XRF assays were utilized for the purpose of data analysis and reporting. Differences in ICP and XRF data were attributed to the incomplete dissolution of organics during acid digestion prior to ICP analyses.

To prepare the feed for HydroFloat testing, samples were split into 5 kg batches at 60% solids and conditioned in a stirred mixed tank. The pH was modified to 5.0-5.5 using a 20-35% H_3PO_4 solution for one minute prior to addition of the fatty acid collector. Between 1 and 2.4 kg/ton of H_3PO_4 were used to control the pH at approximately 5.0. The fatty acid was conditioned for an additional 2 minutes while phosphoric acid was used to maintain a pH of ~5.0.

Initial testing with fatty acid reagent dosages of 2000 g/ton were undertaken; however, a lack of upgrade between the concentrate and feed were observed. Reagent dosages were therefore lowered, and four optimization tests were performed. The most optimal results were observed using 250 and 325 g/ton of fatty acid. Tests 2 and 4, performed using 250 and 325 g/ton fatty acid, respectively, produced the most optimal flotation performance. Test 2 produced a P_2O_5 concentrate grade of 30.9% with a recovery of 88.5% while Test 4 produced a P_2O_5 concentrate grade of 31.2% at a recovery of 79.9%. However, the concentrate MgO grade for Test 2 was at the maximum acceptable limit. As such, a collector dosage of 325 g/ton was used to generate the bulk concentrate to ensure the targeted P_2O_5 and MgO product concentrations were met. The final bulk product was 31.7% P_2O_5, 8.5% SiO_2, and 0.37% MgO grade at an 82% phosphate recovery.

13.2.4.2.5.5 Column Flotation

Following the mechanical cell optimization testing, reverse flotation tests for MgO and SiO_2, as well as column flotation tests, were conducted on the classified 150x38 micron size fraction. The 3-inch flotation column utilized an EFD Cavitation-Tube sparging system and was operated in batch mode. The froth level was maintained using a PID loop controller, and tap water served as wash water during the tests.

The column feed for flotation was prepared by transferring solid material into a slurry tank and adjusting the percent solids to the desired range of 30% to 40% w/w by adding tap water. The feed slurry was conditioned with phosphoric acid (H_3PO_4) in a conditioning tank, followed by dolomite collector conditioning. The conditioned feed was then pumped to the rougher column cell. After dolomite flotation, the column underflow was conditioned with silica collector and pumped to the column cell for silica flotation. The conditioning time for both depressant and collectors in dolomite and silica floats was approximately 2.0 minutes each. To optimize flotation results, various parameters such as solids feed rate, reagent addition rate, air rate, wash water rate, and froth interface level were adjusted. Samples of the feed, overflow, and underflow were taken under steady-state conditions and analyzed. Mass balances were performed using measured mass yields and sample assays. A total of 20 column flotation tests were conducted on the 150x38 micron feedstock, with 13 tests on dolomite flotation and 7 tests on silica flotation. The combined average results for dolomite and silica bulk flotation showed a P_2O_5 concentrate grade of 30.5% with a recovery of 91.7%.

13.2.4.2.5.6 Bulk Flotation Process

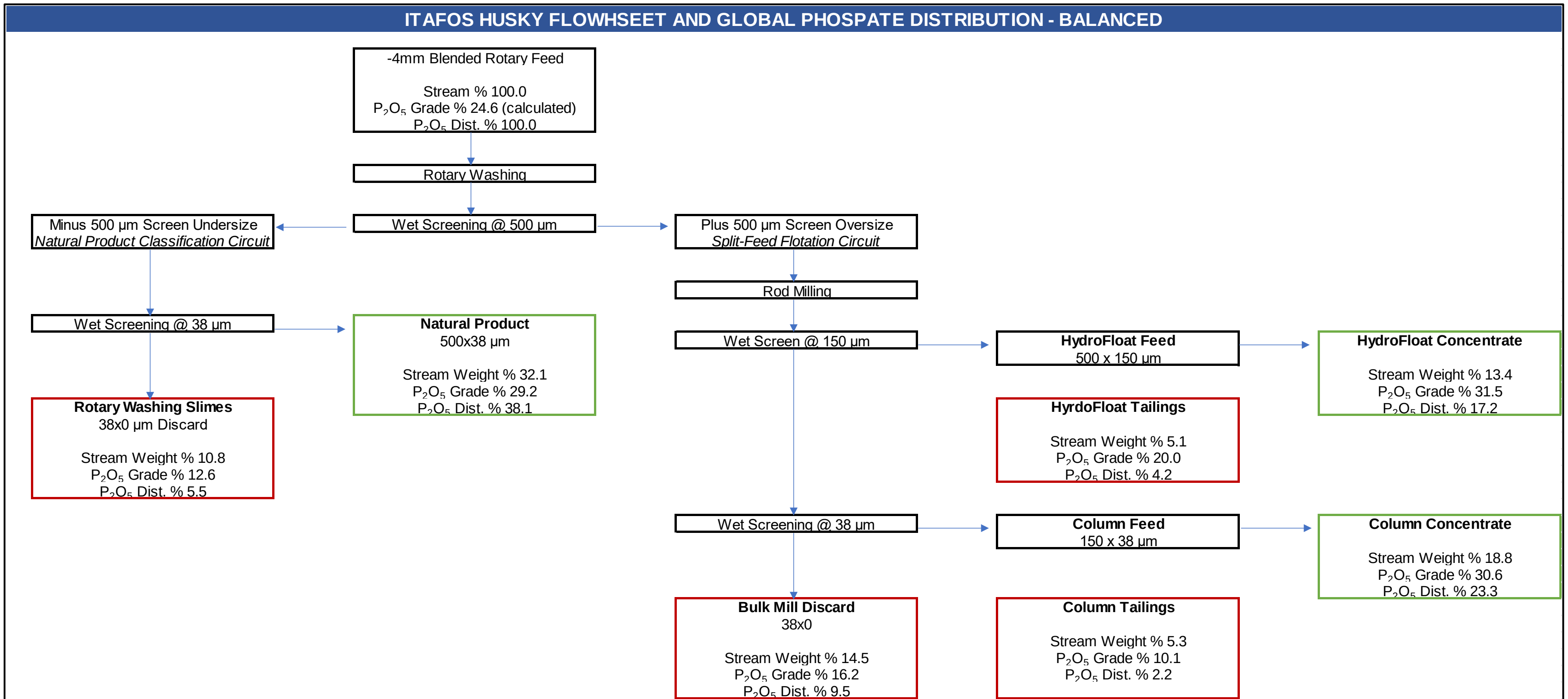
The flowsheet in Figure 13.4 illustrates the balanced bulk processing circuit for the combined upper and lower zone feedstock. Final product streams and tailings are highlighted in green and red, respectively. The cumulative concentrate product, including the rotary washing product, HydroFloat concentrate, and column concentrate, accounted for 64.3% of the circuit feed, with P_2O_5, SiO_2, and MgO contents of 30.1%, 9.3%, and 0.40%, respectively, at a phosphate recovery of 78.6%. The combined tailings product, including slimes and flotation tailings, represented 35.7% of the circuit feed and had a P_2O_5 content of 14.7%, accounting for 21.4% of the global phosphate distribution. The column concentrate and tailing streams were obtained through two-stage reverse flotation of MgO and SiO_2, while coarse HydroFloat flotation employed a single MgO reverse flotation stage.

The optimal feed preparation method for both financial and technical considerations involved rotary washing of the P98 4mm circuit feed at neutral pH, followed by milling the plus 500-micron rotary washed product to a P98 of 300 microns at neutral pH. The rotary wash product was then classified at 500 and 38 microns, resulting in a 500x38 micron natural product. The minus 38-micron rotary washed product was rejected as slimes. The milled product was further classified at 150 and 38 microns, generating the flotation streams for HydroFloat (300x150 microns) and Cav-Tube column flotation (150x38 microns). The 38x0 micron milled product was discarded as slimes.

The target requirements for P_2O_5 grade and recovery were narrowly missed, with a goal of 30% grade and 80% recovery. The achieved grades for P_2O_5, MgO, and SiO_2 were within the desired range, but the overall phosphate recovery was 78.6%. To increase P_2O_5 global recoveries, it is suggested to remove the SiO_2 flotation stage during column flotation and operate the HydroFloat closer to the minimum acceptable MgO grade, as observed in test 2 of HydroFloat optimization testing.

Furthermore, it should be noted that the P_2O_5 grade of the rotary wash product varied depending on the feed to the circuit/plant. Although small-scale benchtop testing showed P_2O_5 grades over 30%, the rotary wash product's P_2O_5 head grade during bulk processing was only 29.2%. Investigating the classification of the rotary wash product at a coarser screen size, such as 45 microns, could be explored to increase the P_2O_5 grade.

Both the benchtop and bulk scale test work achieved success in developing a robust flowsheet and material balance and performed as per the targets set initially for the program. As a result, it is estimated that for the Husky1 ore tested, the designed flowsheet is adequate to achieve product specifications and no processing factors or deleterious elements will have a significant adverse effect on potential economic extraction.



Itafos Husky Global Product Calculated Head							
Assay - XRF				Distribution			
%P_2O_5	%CaO	%SiO_2	%MgO	%P_2O_5	%CaO	%SiO_2	%MgO
30.1	44.5	9.3	0.40	78.6	72.4	40.1	28.9

Itafos Husky Global Discard Calculated Head							
Assay - XRF				Distribution			
%P_2O_5	%CaO	%SiO_2	%MgO	%P_2O_5	%CaO	%SiO_2	%MgO
14.7	30.6	24.9	1.8	21.4	27.6	59.9	71.7

Figure 13.4: Flowsheet and Global Phosphate Distribution – Balanced

14.0 MINERAL RESOURCE ESTIMATES

This Item contains forward-looking information related to Mineral Resource estimates for the Conda Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: geological and grade interpretation and controls.

This Item contains a discussion of the key assumptions, parameters, and methods used to estimate the Mineral Resources on the Property. The purpose of the discussion is to provide readers with an understanding of the basis for the mineral resource estimate and how it was generated. The Mineral Resource estimates comply with all disclosure requirements for mineral resources that are set out in NI 43-101. The Item concludes with a general discussion on the extent to which the mineral resource estimates could be materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors.

14.1 Key Assumptions, Parameters, and Methods Used to Estimate the Mineral Resources

The following sub-Items of this Item provide discussion of the key assumptions, parameters, and methods used to estimate the Mineral Resources to provide an understanding of the basis for the estimate and how it was generated.

14.1.1 Geological Modeling Methodology and Assumptions

Geological Modeling and Mineral Resource estimation for the Project was performed under the supervision of the WSP QP. The geological models for RVM, NDR, and H1SMC were developed as stratigraphically constrained grade block models using a combination of Leapfrog and Vulcan modeling software. All modeling software selected are industry standard computer-assisted geological, grade modeling, and estimation software applications.

The geological interpretation was used to control the Mineral Resource estimate by developing a contiguous stratigraphic model (all units in the sequence were modeled) of the host rock units deposited within the Meade Peak Member, the roof and floor contacts of which then served as hard contacts for constraining the grade interpolation. Overburden and underburden surfaces and intervals were also modeled for stratigraphic continuity as well as to provide waste volumes and grades for future mine design and scheduling efforts.

The following Items provide details on the key components of the geological models developed for the RVM, NDR, and H1SMC deposits.

14.1.2 Geological Modeling Database

WSP evaluated all available drill holes, including the pre-2019 drill holes, and the recent drilling, during the updates to the geological models for both NDR and H1SMC. All available NDR and H1SMC exploration drilling data, including survey information, downhole geological units, gamma logs, sample intervals and analytical results, were compiled by WSP and loaded into an MS Access database. Most of the exploration data was extracted from a series of MS Access databases provided by Itafos. The lithology data was exported directly from Leapfrog, as it included all correlation updates completed by the Itafos senior geologist during the model update process.

No additional drilling since the 2019 TR has been completed on RVM. WSP did not conduct any further review of the geological database that was validated in 2019 as part of the TR.

As described in Item 12.0 of this TR, the QP performed data validation on the drill hole database records using available underlying data and documentation including, but not limited to, original drill hole descriptive logs, chip and core photos and gamma wireline logs.

Validated drilling data for the NDR comprised 292 drill holes (264 RC and 28 core drill holes) totaling 53,928 feet of drilling and containing 5,151 analytical samples. Additionally, there was a total of 40 surface trenches with 262 analytical samples included with the database. Validated drilling data for the H1SMC comprised 370 drill holes (330 RC and 40 core drill holes) totaling 133,290 feet of drilling and containing 22,211 analytical samples. Compiled supporting documentation for NDR and H1SMC drilling data included check assay laboratory certificates, descriptive logs, core and chip photos, collar survey reports, geological maps and internal report documents. As discussed in Item 11.1, formal laboratory certificates are not issued by the CPP laboratory, only assay results in tabular format. Formal laboratory certificates from the check assays completed at SGS were reviewed against the tabulated assay samples and no errors were found.

Collar survey and downhole geological unit intervals, sample intervals and analytical results were imported into a Strater project, and a graphic downhole log was prepared for each drill hole to facilitate visual inspection of each individual drill hole as well as to allow for a review of correlations of geological units and mineralized zones between adjacent drill holes during the data validation process.

Several drill holes were excluded from the final resource modeling database following the review and update process. Excluded drill holes were primarily chosen based on their negative influence on the structural model. Typically, these drill holes were in areas of closely spaced drilling. Additionally, the assay data from 40 surface trenches at NDR were excluded from the final resource database due to concerns over assay quality and reliability. The surface trenches were used for structural modeling only.

Table 14.1 summarizes the different drill holes by type and program for both projects. Table 14.2 summarizes the excluded drill holes from the final resource modeling database.

Table 14.1: Summary of Resource Modeling Database

Deposit	Drill Program	RC			Core			Trench		
		Drill Hole Count	Total Depth (ft)	Assay Sample Count	Drill Hole Count	Total Depth (ft)	Assay Sample Count	Trench Count	Total Length (ft)	Assay Sample Count
RVM	2008-2010	69	20,636	3,951	-	-	-			-
	2011-2016	141	39,119	7,842	-	-	-	-	-	-
	Total	**210**	**59,754**	**11,793**	-	-	-	-	-	-
NDR	1980-1989	246	45,842	8,231	-	-	-	37	1,268	-
	2012	-	-	-	10	2,742	-	-	-	-
	2022	11	2,372	1,183	14	1,582	784	-	-	-
	Total	**257**	**48,214**	**9,414**	**24**	**4,324**	**784**	**37**	**1,268**	-
H1SMC	1976-1989	66	19,212	1,015	-	-	-	-	-	-
	2011-2014	213	81,349	15,761	18	7,182	-	-	-	-
	2019-2022	44	16,507	3,452	22	7,226	1,649	-	-	-
	Total	**323**	**117,068**	**20,228**	**40**	**14,408**	**1,649**	-	-	-

Notes: 2012 core assay samples were not available for review and validation.

Table 14.2:Summary of Drill Holes Excluded from Resource Model

Deposit	Drill Program	RC			Core			Trench		
		Drill Hole Count	Total Depth (ft)	Assay Sample Count	Drill Hole Count	Total Depth (ft)	Assay Sample Count	Trench Count	Total Length (ft)	Assay Sample Count
RVM	2008-2010	-	-	-	-	-	-	-	-	-
	2011-2016	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-
NDR	1980-1989	7	929	49	-	-	-	3	91	262
	2012	-	-	-	-	-	-	-	-	-
	2022	-	-	-	4	461	112	-	-	-
	Total	**7**	**929**	**49**	**4**	**461**	**112**	**3**	**91**	**262**
H1SMC	1976-1989	-	-	-	-	-	-	-	-	-
	2011-2014	5	1,241	164	-	-	-	-	-	-
	2019-2022	-	-	-	2	574	170	-	-	-
	Total	**5**	**1,241**	**164**	**2**	**574**	**170**	-	-	-

Notes: All Trench assay samples were excluded from final resource model. Trench data was used only in the structural model. 2012 core assay samples were not available for review.

The drill hole database included a table for the collar, downhole survey, lithology, assay, and gamma data for each deposit. Drill holes were flagged as to whether they were included or excluded in the geological modeling. Due to the complex structural nature of both deposits, the RC and core drill holes were often drilled at an incline to the bedding. A total of 171 RVM, 189 NDR and 132 H1SMC drill holes were drilled at an inclination of between -49° and -85° and oriented at an azimuth between 90° and 287°.

14.1.3 Exploratory Data Analysis

14.1.3.1 Statistical Analysis

WSP performed updated Exploratory Data Analysis (EDA) on the geological modeling databases for NDR and H1SMC. The EDA for RVM was completed in 2019 and no further updates were made as part of this TR; EDA for RVM is presented in detail in the 2019 TR. The EDA was comprised of a statistical and geostatistical analysis of the verified data for each individual area to allow for evaluation of the statistical and spatial variability of the geological data. The EDA aided in the evaluation of the geological domains used in modeling by evaluating statistical and spatial trends in the data for the identified geological domains. Additionally, the EDA process supports the development of interpolation parameters used in geological modeling as well as aiding in establishing the Mineral Resource categorization parameters of measured, indicated, and inferred for both NDR and H1SMC.

The initial phase of EDA on the NDR and H1SMC databases was completed on the global datasets to look for trends and outliers in the data. WSP used Phinar Software X10-Geo™ (X10) software and involved the development of descriptive univariate statistics, box and whisker graphs, histograms, probability statistics, and scatter plots for all the available assay data in each deposit. Table 14.3, Table 14.4 and Table 14.5 summarize the length-weighted statistics for each grade variable used for block estimation for RVM, NDR and H1SMC respectively.

Table 14.3: Summary Statistics for RVM Estimation Variables

Grade Variable (wt. %)	Raw Sample Count	Min	Max	Mean	Variance	StDev	CV	Skewness	Kurtosis	Median
P_2O_5	11,793	0.00	40.55	16.18	118.90	10.90	0.67	0.12	-1.32	15.00
Al_2O_3	11,793	0.00	17.40	3.85	7.74	2.78	0.72	1.02	0.33	3.05
MgO	11,793	0.00	22.81	3.01	21.05	4.59	1.52	1.93	2.84	0.73
CaO	11,791	0.00	61.98	28.25	168.70	12.99	0.46	-0.39	-0.67	29.82
Fe_2O_3	11,793	0.00	21.88	1.40	1.13	1.07	0.76	3.02	28.46	1.11
LOI	11,788	0.00	98.21	13.81	92.25	9.61	0.70	1.36	1.89	10.43
Cd	11,793	0.00	0.38	0.01	0.00	0.01	0.99	12.05	569.20	0.01
K	11,793	0.00	12.53	0.88	0.33	0.58	0.66	1.38	13.78	0.73
Si	11,793	0.00	48.45	12.43	87.52	9.36	0.75	1.26	1.31	9.64

Notes: StDev = Standard deviation.
CV = Coefficient of Variation.

Table 14.4: Summary Statistics for NDR Estimation Variables

Grade Variable (wt. %)	Raw Sample Count	Min	Max	Mean	Variance	StDev	CV	Skewness	Kurtosis	Median
P_2O_5	4,728	0.10	37.42	19.13	98.62	9.93	0.52	-0.17	-1.16	20.10
Al_2O_3	2,938	0.16	16.75	4.32	7.42	2.72	0.63	0.60	-0.55	3.72
MgO	4,729	0.03	38.74	1.44	8.99	3.00	2.09	4.14	24.19	0.36
CaO	1,142	0.18	53.05	22.06	234.90	15.33	0.69	0.20	-1.19	21.28
Fe_2O_3	1,142	0.09	8.79	1.82	1.25	1.12	0.61	1.00	2.27	1.66
LOI	4,726	0.09	45.71	9.90	42.94	6.55	0.66	1.62	3.06	7.80
Cd	1,142	0.00	0.08	0.01	0.00	0.01	1.11	2.48	11.61	0.01
K	1,142	0.03	3.26	1.04	0.40	0.63	0.61	0.46	-0.55	0.96
Si	1,142	0.73	45.23	17.81	126.70	11.25	0.63	0.40	-0.88	16.39

Notes: StDev = Standard deviation.
CV = Coefficient of Variation.

Table 14.5: Summary Statistics for H1SMC Estimation Variables

Grade Variable (wt. %)	Raw Sample Count	Min	Max	Mean	Variance	StDev	CV	Skewness	Kurtosis	Median
P_2O_5	21,877	0.01	37.62	14.17	93.19	9.65	0.68	0.26	-1.09	13.04
Al_2O_3	20,870	0.00	12.56	3.81	5.83	2.41	0.63	0.71	-0.27	3.21
MgO	21,883	0.00	20.70	2.62	12.81	3.58	1.37	2.19	4.54	1.08
CaO	20,868	0.00	80.65	27.69	135.00	11.62	0.42	-0.25	-0.66	29.17
Fe_2O_3	20,866	0.00	24.28	1.39	0.69	0.83	0.60	2.12	32.90	1.18
LOI	21,884	0.07	45.59	14.90	65.13	8.07	0.54	1.06	1.00	13.17
Cd	18,832	0.00	0.06	0.01	0.00	0.01	0.96	1.49	3.05	0.00
K	20,863	0.00	6.66	0.87	0.27	0.52	0.60	0.68	0.39	0.76
Si	20,716	0.00	110.40	12.95	81.01	9.00	0.70	1.51	4.70	10.54

Notes: StDev = Standard deviation.
CV = Coefficient of Variation.

WSP composited the sample length data based on several factors including a visual inspection of the geological logs in Strater, and via cross sections in Vulcan or Leapfrog, which was in turn supported by statistical analysis of sample length data. Based on these reviews, the assay sample intervals and data for NDR and H1SMC were composited using the lithology codes and from and to depths to apply modeled bed names to the assay data. Further discussion on the sample compositing process is presented in Item 14.1.5.3 of this TR.

A second phase of EDA was undertaken in X10 for both deposits once the drill hole samples were composited, with the assay data domained into the specific correlatable beds. To allow for the evaluation of trends and patterns in the domained data, WSP developed descriptive univariate statistics as well as a series of statistical plots including box and whisker, histogram, probability, and scatter plots using the bed domains for each deposit.

14.1.3.2 Geostatistical Analysis

WSP completed a semi-variogram analysis (variography) for each deposit for key grade variables (where possible) for both NDR and H1SMC datasets using the Vulcan Data Analyzer software. Golder completed variography for RVM during the development of the 2019 TR using WSP's in-house Ore Block Optimiser (OBO™) software.

The grade variables that were attempted for variography for RVM included P_2O_5, MgO, Fe_2O_3 and Al_2O_3. Further updates were not made for the 2023 TR. For NDR, only P_2O_5, MgO, and Al_2O_3 had sufficient samples to complete the variography. The grade variables with sufficient samples to allow for variography for H1SMC included P_2O_5, MgO, CaO, Fe_2O_3, K, Cd, and Al_2O_3. Where a variogram could be modeled for the grade variable and deposit, the variogram parameters were utilized for grade estimation and the ranges of the variograms were used to assist with the definition of the Mineral Resource categorization parameters.

For the 2023 block model updates, WSP created unfolded models in Vulcan for both NDR and H1SMC and conducted the variography on the unfolded models. Unfolding is typically used in grade estimation and variography of deformed strata bound deposits such as those at Conda. In unfolding, the grade estimation search ellipse, or variography search ellipse, is distorted from the usual "football" shaped ellipse to follow nominated surfaces, in this case the beds. The benefit of using distorted search ellipses is that the block model stays in the position that it was created, and the samples stay in their true position.

The objectives of the variography were to:

- Evaluate the directions of major thickness continuity.
- Quantify spatial continuity (variability, anisotropy, and overall continuity).
- Provide variogram model parameters for use in Mineral Resource classification.

Variogram analysis was performed on the bed-constrained composited sample databases. Due to the limited number of samples per bed, samples for all ore beds were evaluated as a single sample population. The experimental variograms were calculated and modeled with a range of lag distances and tolerances to identify the most robust experimental variogram structure. Directional variography requires search tolerances to be used for calculation of variograms, to address the fact that the drill hole samples are not perfectly aligned in each direction in three-dimensional (3D) space and are not equally spaced along that direction. This requires the use of angular and distance tolerances.

Due to drill hole sample counts and spatial distribution as well as inherent spatial grade continuity characteristic present in the deposits, only directional anisotropy variograms were modeled for RVM, NDR and H1SMC.

Example variograms for P_2O_5 are shown in Figure 14.1 for RVM, Figure 14.2 for NDR, and Figure 14.3 for H1SMC. A summary of the variogram model parameters for each deposit are presented in Table 14.6.

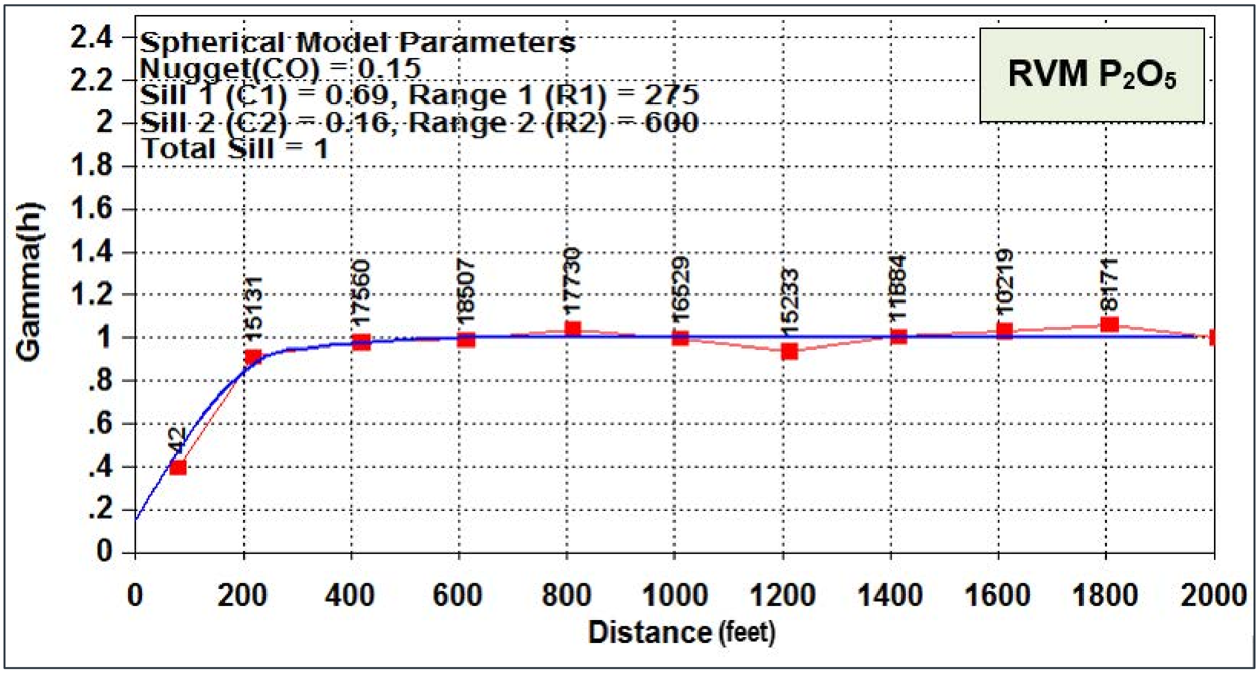


Figure 14.1: RVM Variography – P_2O_5, All Beds Combined (2019 TR)

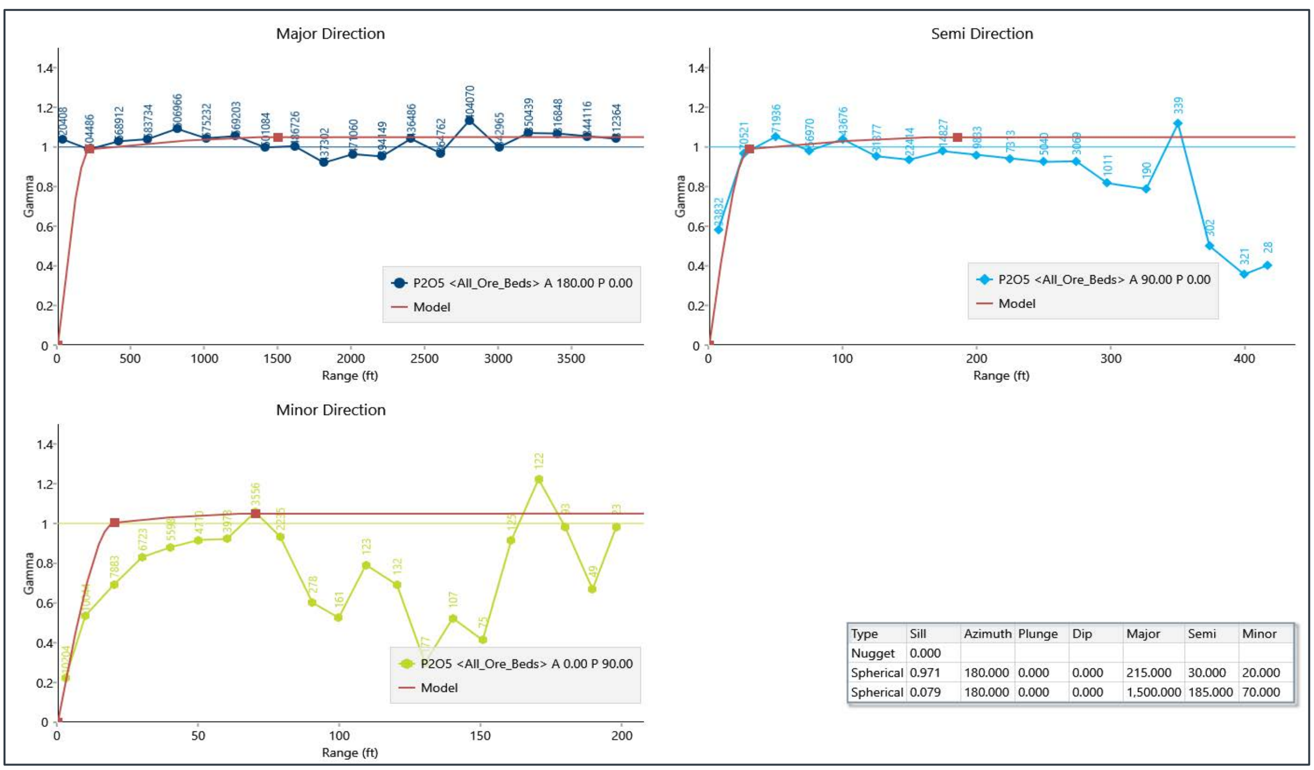
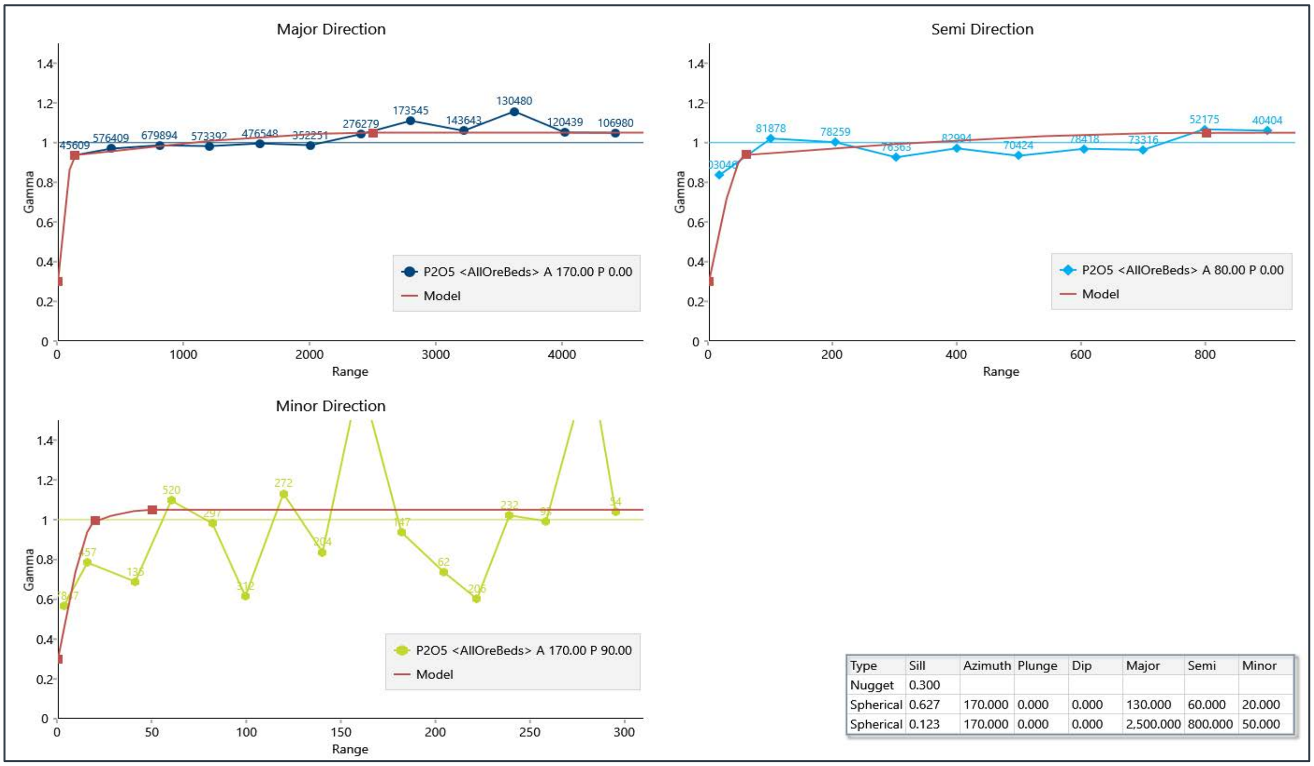


Figure 14.2: NDR Variography – P_2O_5, All Beds Combined



Type	Sill	Azimuth	Plunge	Dip	Major	Semi	Minor
Nugget	0.300						
Spherical	0.627	170.000	0.000	0.000	130.000	60.000	20.000
Spherical	0.123	170.000	0.000	0.000	2,500.000	800.000	50.000

Figure 14.3: H1SMC Variography – P_2O_5, All Beds Combined

Table 14.6: Summary of RVM, NDR and H1SMC Variogram Parameters

Deposit	Parameter	Variogram Type	Variogram Model	Model Axis	Azimuth	Plunge	Lag Distance (feet)	Nugget	Total Sill	Total Range (feet)
RVM	P_2O_5	Anisotropic	Spherical	Major	155	0	200	0.15	1.00	600
				Semi-Major	65	65	200	0.15	1.00	640
				Minor	0	-90	10	0.15	1.00	20
NDR	P_2O_5	Anisotropic	Spherical	Major	180	Dynamic	200	0.00	1.05	1,500
				Semi-Major	Dynamic	Dynamic	25	0.00	1.05	185
				Minor	Dynamic	Dynamic	10	0.00	1.05	70
	MgO	Anisotropic	Spherical	Major	180	Dynamic	200	0.10	1.00	1,250
				Semi-Major	Dynamic	Dynamic	25	0.10	1.00	125
				Minor	Dynamic	Dynamic	10	0.10	1.00	50
	Al_2O_3	Anisotropic	Spherical	Major	180	Dynamic	200	0.10	1.00	800
				Semi-Major	Dynamic	Dynamic	25	0.10	1.00	85
				Minor	Dynamic	Dynamic	10	0.10	1.00	50
	Fe_2O_3	Anisotropic	Spherical	Major	180	Dynamic	200	Could not model Used P_2O_5 Parameters		
				Semi-Major	Dynamic	Dynamic	25			
				Minor	Dynamic	Dynamic	10			
	Cd	Anisotropic	Spherical	Major	180	Dynamic	200	Could not model Used P_2O_5 Parameters		
				Semi-Major	Dynamic	Dynamic	25			
				Minor	Dynamic	Dynamic	10			
H1SMC	P_2O_5	Anisotropic	Spherical	Major	170	Dynamic	400	0.30	1.05	2,500
				Semi-Major	Dynamic	Dynamic	100	0.30	1.05	800
				Minor	Dynamic	Dynamic	50	0.30	1.05	50
	MgO	Anisotropic	Spherical	Major	170	Dynamic	400	0.40	1.17	1,200
				Semi-Major	Dynamic	Dynamic	100	0.40	1.17	500
				Minor	Dynamic	Dynamic	50	0.40	1.17	30
	Al_2O_3	Anisotropic	Spherical	Major	170	Dynamic	400	0.15	1.00	2,150
				Semi-Major	Dynamic	Dynamic	100	0.15	1.00	230
				Minor	Dynamic	Dynamic	50	0.15	1.00	40
	Fe_2O_3	Anisotropic	Spherical	Major	170	Dynamic	400	0.15	1.00	2,150
				Semi-Major	Dynamic	Dynamic	100	0.15	1.00	235
				Minor	Dynamic	Dynamic	50	0.15	1.00	50
	Cd	Anisotropic	Spherical	Major	170	Dynamic	400	0.15	1.00	1,000
				Semi-Major	Dynamic	Dynamic	100	0.15	1.00	225
				Minor	Dynamic	Dynamic	50	0.15	1.00	50

14.1.4 Geological Modeling

Geological modeling and Mineral Resource estimation for RVM, NDR, and H1SMC was performed under the supervision of the WSP QP. The geological model was developed as a structurally controlled geological domain model in Leapfrog and a geological domain constrained grade block model using Vulcan, which are computer-assisted geological, grade modeling, and estimation software applications.

The geological domains in the RVM, NDR, and H1SMC project models comprise the named beds that are the stratigraphic subdivisions of the Meade Peak Member as well as the overlying and underlying burden units. The beds are the basis of the geological and grade models and are used to identify and control the positions, volumes and interpolated grades of the mineralized material constrained by the roof and floor surfaces of the beds and units. The bed boundaries were modeled as hard boundaries, with sample grades interpolated only within the bed sampled. Overburden and underburden surfaces and intervals were also modeled for stratigraphic continuity as well as to provide unmineralized material volumes and grades for future mine design and scheduling efforts.

The named beds for the Conda projects models are shown in Table 14.7. The bed sequences are generally the same for all projects as shown in the table although there is some minor variation between projects or within fault blocks of individual models. For the Conda project models, the Upper Phosphate Zone (UPZ) and Lower Phosphate Zone (LPZ) are broken out into a series of alternating phosphatic and un- to weakly-mineralized units, separated by a center interburden (CIB) unit. The steeply dipping to subvertical nature of the beds in the Conda projects, allows for selective mining of mineralized and unmineralized units using proven open pit mining methods currently used at RVM, and previously used at past Conda operations, including LCM.

Table 14.7: Conda Projects Model Bed Names

Age	Formation	Member	Zone	Model Bed Nomenclature		Phosphate Grade
				Bed	Description	
Quaternary			Overburden	ALUV	Quaternary Alluvium	
Triassic	Dinwoody			DNW	Dinwoody	
Permian	Phosphoria	Rex Chert		CHTSH	Cherty Shale	
				RXCHT	Rex Chert	
		Meade Peak	Upper Phosphate Zone	HWM	Hanging Wall Muds	
				D1	D1 Bed	High
				D2	D2 Parting	-
				D3	D3 Bed	High
				D4	D4 Parting	-
				UIB	Upper Inter Bed	High
				D51	D51 Bed	Low-Medium
				D52	D52 Bed	Low-Medium
			Center Interburden	CIB	Center Interburden	-
			Lower Phosphate Zone	C	C Bed	Low-Medium
				FC	False Cap	-
				UB	Upper B Bed	High
				BP	B Parting	-
				LB	Lower B	High
				AC	A Cap	Low-Medium
				A	A Bed	High
				FWM	Foot Wall Muds	
Permo-Pennsylvanian	Park City and Wells		Underburden	LST	Undifferentiated Grandure Tongue Limestone and Wells Limestone	

The following items provide details on the model extents as well as key components of the geological model developed in Leapfrog and Vulcan, namely the topographic model, structural model, and the grade model.

14.1.4.1 Model Extents

The Mineral Resource evaluation presented in this TR covers an area of approximately 4,595 acres for RVM, 520 acres for NDR and 5,600 acres for H1SMC. The RVM, NDR and H1SMC models were constructed in the relevant mine grid coordinate systems. All models were constructed in imperial units and model axes were oriented north-south and east-west; the models were not rotated within their respective mine grids.

The Mineral Resource plan dimensions, defined by the spatial extent of the drilling at RVM, NDR and H1SMC and constrained to within the lease boundaries, were approximately 12,520 feet east-west by 16,000 feet north-south for RVM, were approximately 2,200 feet east-west by 10,500 feet north-south for NDR, and approximately 8,300 feet east-west by 29,400 feet north-south for H1SMC. The upper and lower limits of the Mineral Resource span from surface, where the mineralized units outcrop locally, through to a maximum depth of 1,520 feet below surface for RVM, 1,400 feet for NDR and approximately 2,000 feet for H1SMC. The model extents for NDR and H1SMC is shown in Figure 14.4.

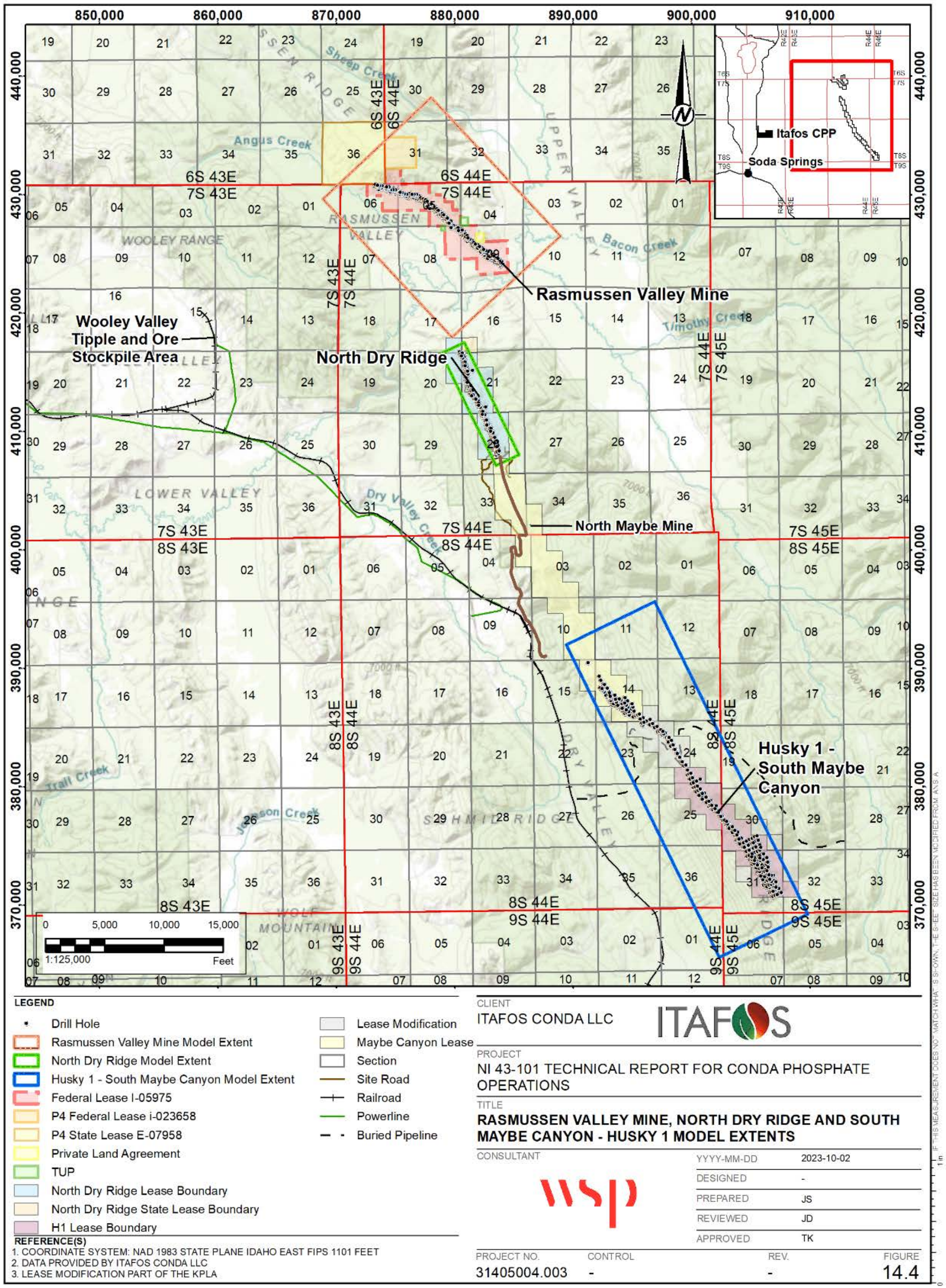


Figure 14.4: RVM, NDR and H1SMC Model Extents

14.1.4.2 Topographic Model

The topographic model for RVM was developed by triangulation of the source topographic data in Vulcan™, in the RVM mine grid. Both original topography and end of month June 2019 topographic surfaces were used in the development of the RVM geological model where mining operations are currently underway. The geological model was developed using original topography to capture total resource tons in the model; however, the resource estimates were prepared using the surveyed topographic surface (as-built surface surveyed by Conda survey department) for the end of month June 2023 to reflect resources remaining at the effective date of July 1, 2023, for the Mineral Resources.

The topographic models for NDR and H1SMC were developed from LiDAR data collected in 2021 over both deposits. The LiDAR data was imported into Leapfrog and the topographic surface was developed from 10-foot contours by the Itafos senior geologist. As presented in Item 9.5 of this TR, the LiDAR topographic surface was reviewed against the surveyed drill hole collars for each of the deposits; a summary of the collar versus topographic elevation statistics was presented in Table 12.1.

The collar versus topographic elevation analysis for NDR and H1SMC identified greater discrepancies between the surveyed collar elevations and topographic surface elevations, however improvements have been made since 2019 with the acquisition of the 2021 LiDAR survey. Mean differences of 3.9 feet (range of 0.0 to 18.4 feet) for NDR and mean differences of 11.2 feet (range of 0.0 to 162.0 feet) for H1SMC were noted. Both deposits are situated along the top of a steep, heavily forested ridge back. The rapid changes in elevation due to the steepness as well as the dense forest cover have imparted some degree of error in the topographic surface. Additionally, the largest discrepancies in H1SMC are in the SMC extension area which includes historical mining completed after these holes were drilled.

14.1.4.3 Structural Model

For the 2019 PEA, WSP geologists prepared the RVM, NDR and H1SMC models in Leapfrog and Vulcan. These models were then provided to Itafos. For the 2023 TR, the Itafos Senior Geologist performed the geological model updates for NDR and H1SMC in Leapfrog under the supervision of the WSP QP. These updates were then reviewed by WSP in a series of in-person technical meetings and refinements were made as required. No updates were made to the RVM structure model; the RVM structural modelling process is described in detail in the 2019 TR. The general workflow for structure modeling for RVM, NDR and H1SMC was as follows:

- The validated drill hole databases from the 2019 PEA were exported from Vulcan and Itafos imported the data into Leapfrog software. Additional drilling data since the 2019 PEA was included for both models.
- Fault blocks were imported into Leapfrog from Vulcan.
- Reference surface(s) were selected, and initial surface models developed. Digitized structural controlling data was imported to Leapfrog from Vulcan and other sources to control the reference surface.
- The modeled surfaces were generally modeled using the ‘surface from offset’ options tools.
- This process allows for a set of stratigraphic surfaces which closely follow the trend or structural features of the reference surface.
- The ‘surface from offset’ modeling method constructs a set of surfaces, similar to ‘stacking’ functions that other software packages utilize, to calculate a bed position based on the distance between the roof or floor of that bed and a selected reference surface.

- The process allows for changes in bed thickness in the drill holes and constructs the units with varying thicknesses.
- Where required, additional structural data was imported into Leapfrog from other sources, including historical maps, to assist in controlling individual bed surfaces.
- Bed surfaces were exported from Leapfrog as solids and imported into Vulcan for use in block modeling.

While the above process was followed in general, due to the individuality of each Conda deposit, the following variations were used to complete the individual Conda geological models. The model units for the Conda deposit models are as previously presented in Table 14.7.

NDR Specific Modeling Steps and 2023 Updates

- The NDR model contained two faults (Fault 1 and Fault 2) which divided the model into three fault blocks called Fault Block 1 (FB01), Fault Block 2 (FB02), and Fault Block 3 (FB03).
- Due to a lack of data for the upper ore unit in FB01, the block was modeled using a stratigraphic sequence method and digitized data to control the positions of the ore beds.
- The Lower ore unit (FWM, A, AC, LB, BP, UB, FC, and C beds) was modeled using the base of the A bed as the reference surface.
- The CIB unit was modeled between the LPZ and UPZ ore units.
- The Upper ore unit (D52, D51, UIB, D4, D3, D2, D1, and HWM beds) was modeled using the base of the D52 bed as the reference surface.
- Limestone (LST) surfaces were modeled below the lower ore.
- Chert (CHTSH) and was modeled in FB02 and FB03 only.
- Due to lack of data, the Dinwoody (DNW) was not modeled for NDR.

H1SMC Specific Modeling Steps and 2023 Updates

- The H1SMC model contained five faults (Fault 1, Fault 2, Fault 3, Fault 4, and Fault 5) which divide the model into six fault blocks called Fault Block 1 (FB01), Fault Block 2 (FB02), Fault Block 3 (FB03), Fault Block 4 (FB04), Fault Block 5 (FB05) and Fault Block 6 (FB06).
- The Lower ore unit (FWM, A, AC, LB, BP, UB, FC, and C beds) was modeled using the base of the A bed as the reference surface.
- The CIB was modeled between the LPZ and UPZ ore units.
- The Upper ore unit (D52, D51, UIB, D4, D3, D2, D1, and HWM beds) was modeled using the base of the D52 Bed as the reference surface.
- LST surfaces were modeled below the LPZ.
- CHTSH and DNW were modeled above the UPZ for all Fault Blocks.

14.1.5 Grade Model

This sub-item contains forward-looking information related to density and grade for the RVM, NDR and H1SMC Projects. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-item including actual in-situ characteristics that are different from the samples collected and tested to date, equipment and operational performance that yield different results from current test work results.

WSP developed new block models for NDR and H1SMC using Vulcan conventional block modeling tools. Volumetric wireframes (solids) for each unit and bed to be included in the block model were exported from Leapfrog and imported into Vulcan. The model block size parameters were driven by individual deposit geometry and as well as guidance from WSP mining engineers based on evaluations of the potential mining methods. WSP did not update the RVM block model for the 2023 TR; the RVM grade modelling process is described in detail in the 2019 TR.

The block model spatial extents and block size parameters for the RVM, NDR and H1SMC models are presented in Table 14.8 and previously illustrated in Figure 14.4.

Table 14.8: Block Model Spatial Extents and Block Size Parameters for Each Model

Deposit	Direction	Origin (ft)	Extent (ft)	Parent Block Size (ft)	Sub-block Size (ft)
RVM	Easting (X)	3,800	12,520	40	2
	Northing (Y)	7,000	16,000	40	20
	RL (Z)	6,150	1,520	40	5
NDR	Easting (X)	11,500	2,200	40	2
	Northing (Y)	39,200	10,500	40	10
	RL (Z)	6,200	1,400	40	2
H1SMC	Easting (X)	70,200	8,320	40	2
	Northing (Y)	23,600	29,400	40	20
	RL (Z)	7,000	2,000	40	2

The block model was constrained by the individual bed solids organized by fault block. The fault blocks and beds were coded into the block model to allow for estimation across faults. For RVM, NDR and H1SMC, the block modeling workflow was contained within a reusable and repeatable script which performed all of the required workflow steps.

The following workflow was undertaken:

- Construction of a block model framework containing the topographic surface, and wireframes enclosing the surficial Alluvium (ALUV), the underlying LST, overlying CHTSH and DNW units and the ore and waste beds of the UPZ and LPZ (FWM, A, AC, LB, BP, UB, FC, C, CIB, D52, D51, UIB, D4, D3, D2, D1, and HWM beds).
- Blocks were flagged by bed name and a corresponding bed number using the exported wireframes.
- Sub-blocking was allowed, where necessary, to account for the intricacies of the bed roof and floor geometries relative to the blocks.

- An unfolding model was created for each fault block within Vulcan. The HWM-D1 contact surface and A-FWM contact surface were used as the upper and lower surface wireframes to define the shape of the unfolding model and then three points chosen from one of the surfaces were used to define the plane.
- Each fault block in each deposit was estimated independently to utilize the unique unfolding models, but samples were allowed to cross fault boundaries.
- Grade was estimated using deposit specific block estimation parameters.
- Grade capping was applied to CaO%, Fe_2O_3%, K% and Si% for the H1SMC block model, as discussed in 14.1.5.4.
- Blocks within a radius of 50 ft from the modeled fault positions were flagged to determine ore blocks affected by fault uncertainty.
- A single density value was assigned to all blocks that were flagged with a bed number.
- Ore and waste tons were calculated.
- Blocks were flagged with pre-defined ore product types and corresponding numbers (‘oreclass’, ‘orecolor’, ‘orenumber’).
- Each ore block was flagged with a Resource classification (using the ‘class’ and ‘class_int’ variables).
- Tabular resource estimates were exported to MS Excel for formatting and review.

Conda has revised their product classifications scheme since the 2019 PEA and now use a color-based system to flag the block model. WSP created an ‘orecolor’ parameter and updated it based upon the criteria shown in Table 14.9.

Table 14.9: Product Classification by Color

Ore Color	Ore Seam	P_2O_5%	MgO%
Green	Upper Ore Zone	>=20%	<=3.0%
Blue	Lower Ore Zone	>=20%	<=0.6%
Red	Lower Ore Zone	>=20%	>0.6% & <=1.1%
White	Lower Ore Zone	>=20%	>1.1% & <=3.0%
Orange	Upper and Lower Ore Zone	>=20%	>= 3.0%
Waste_Ore	Ore that doesn't make cutoff grade	<20%	
Waste	Waste - Interburden		

14.1.5.1 Search Parameters

WSP performed grade estimation into the block models for each deposit using Vulcan. Grade estimates were completed using Ordinary Kriging (OK).

The geological solids from the Leapfrog model were used to constrain the assignment of the geological unit to the model blocks based on the spatial relationship of the block relative to the solid extents. Grade values were interpolated within the geological units using only samples intersected within those units; sub-celling was applied to allow for improved definition of geological contacts relative to the model blocks at the upper and lower contacts of the units.

Given the stratigraphic nature of the deposits and the fact that the faulting post-dates deposition of the mineralized beds, grade values were allowed to interpolate across fault block boundaries but were restricted to interpolate only within the beds, controlled by the bed names assigned to the model blocks from the stratigraphic model.

Table 14.10, Table 14.11 and Table 14.12 present a summary of the search and interpolation parameters applied for the RVM, NDR and H1SMC block models, respectively. The search parameters were applied across the entirety of each block model; there were no different search parameters applied based on geological, structural, or other domains.

Table 14.10: RVM Search Parameters

Grade Variable	Search Pass	Orientation			Search Distance (ft)			Discretization			Sample Counts			
		Bearing	Plunge	Dip	Major Axis	Semi-Major Axis	Minor Axis	X	Y	Z	Min	Max	Max per drill hole	Min Drill Holes
P_2O_5	1	165°	0°	-65°	500	250	100	5	5	2	4	32	4	N/A
	2	165°	0°	-65°	700	300	200	5	5	2	4	32	4	N/A
	3	165°	0°	-65°	1,000	500	400	5	5	2	4	32	4	N/A
	4	165°	0°	-65°	N/A	N/A	N/A	5	5	2	4	32	4	N/A

For RVM, all other grade variables were estimated using the P_2O_5 search parameters.

Table 14.11: NDR Search Parameters

Grade Variable	Search Pass	Orientation			Search Distance (ft)			Discretization			Sample Counts			
		Bearing	Plunge	Dip	Major Axis	Semi-Major Axis	Minor Axis*	X	Y	Z	Min	Max	Max per drill hole	Min Drill Holes
P_2O_5	1	180°	Dynamic	Dynamic	375	125	1	5	5	2	4	32	4	2
	2	180°	Dynamic	Dynamic	750	250	1	5	5	2	4	32	4	2
	3	180°	Dynamic	Dynamic	1,500	500	1	5	5	2	2	32	4	N/A
	4	180°	Dynamic	Dynamic	6,000	2,000	1	5	5	2	2	32	4	N/A
MgO	1	180°	Dynamic	Dynamic	313	131	1	5	5	2	4	32	4	2
	2	180°	Dynamic	Dynamic	625	263	1	5	5	2	4	32	4	2
	3	180°	Dynamic	Dynamic	1,250	525	1	5	5	2	2	32	4	N/A
	4	180°	Dynamic	Dynamic	5,000	2,100	1	5	5	2	2	32	4	N/A
Al_2O_3	1	180°	Dynamic	Dynamic	200	66	1	5	5	2	4	32	4	2
	2	180°	Dynamic	Dynamic	400	133	1	5	5	2	4	32	4	2
	3	180°	Dynamic	Dynamic	800	265	1	5	5	2	2	32	4	N/A
	4	180°	Dynamic	Dynamic	3,200	1,060	1	5	5	2	2	32	4	N/A

Note: The minor axis in an unfolding model is transformed to a value between 0 and 1. The minor axis was set to a maximum of 1 to account for fault offsets, which allowed samples across fault boundaries to be estimated into blocks on either side.

For NDR, only P_2O_5, MgO, and Al_2O_3 were estimated independently, all other grade variables were estimated using the P_2O_5 search parameters.

Table 14.12: H1SMC Search Parameters

Grade Variable	Search Pass	Orientation			Search Distance (ft)			Discretization			Sample Counts			
		Bearing	Plunge	Dip	Major Axis	Semi-Major Axis	Minor Axis*	X	Y	Z	Min	Max	Max per drill hole	Min Drill Holes
P_2O_5	1	180°	Dynamic	Dynamic	625	200	1	5	5	2	4	32	4	2
	2	180°	Dynamic	Dynamic	1,250	400	1	5	5	2	4	32	4	2
	3	180°	Dynamic	Dynamic	2,500	800	1	5	5	2	2	32	4	N/A
	4	180°	Dynamic	Dynamic	10,000	3,200	1	5	5	2	2	32	4	N/A
MgO	1	180°	Dynamic	Dynamic	300	125	1	5	5	2	4	32	4	2
	2	180°	Dynamic	Dynamic	600	250	1	5	5	2	4	32	4	2
	3	180°	Dynamic	Dynamic	1,200	500	1	5	5	2	2	32	4	N/A
	4	180°	Dynamic	Dynamic	4,800	2,000	1	5	5	2	2	32	4	N/A
Al_2O_3	1	180°	Dynamic	Dynamic	537.5	57.5	1	5	5	2	4	32	4	2
	2	180°	Dynamic	Dynamic	1075	115	1	5	5	2	4	32	4	2
	3	180°	Dynamic	Dynamic	2,150	230	1	5	5	2	2	32	4	N/A
	4	180°	Dynamic	Dynamic	8,600	920	1	5	5	2	2	32	4	N/A
Fe_2O_3	1	180°	Dynamic	Dynamic	537.5	58.75	1	5	5	2	4	32	4	2
	2	180°	Dynamic	Dynamic	1,075	117.5	1	5	5	2	4	32	4	2
	3	180°	Dynamic	Dynamic	2,150	235	1	5	5	2	2	32	4	N/A
	4	180°	Dynamic	Dynamic	8,600	940	1	5	5	2	2	32	4	N/A
Cd	1	180°	Dynamic	Dynamic	250	56.25	1	5	5	2	4	32	4	2
	2	180°	Dynamic	Dynamic	500	112.5	1	5	5	2	4	32	4	2
	3	180°	Dynamic	Dynamic	1,000	225	1	5	5	2	2	32	4	N/A
	4	180°	Dynamic	Dynamic	4,000	900	1	5	5	2	2	32	4	N/A

Note: The minor axis in an unfolding model is transformed to a value between 0 and 1. The minor axis was set to a maximum of 1 to account for fault offsets, which allowed samples across fault boundaries to be estimated into blocks on either side.

For H1SMC, all other grade variables, including LOI, CaO, Si, and K, were modeled using the P_2O_5 search parameters. This was due to limitations on the number of samples available to obtain robust variograms.

14.1.5.2 Block Model Definition

Geological and grade parameter fields for the RVM, NDR and H1SMC block models are summarized in Table 14.13. Default -99 values have been assigned to numerical block parameters as identified in Table 14.13.

Table 14.13: RVM, NDR and H1SMC Block Model Fields and Parameters

Column Number	Parameter	Default Value	Type	Description
1	p2o5_ok	-99	float	P_2O_5 (%) Ordinary Kriging Estimation
2	mgo_ok	-99	float	MgO (%) Ordinary Kriging Estimation
3	al2o3_ok	-99	float	Al_2O_3 (%) Ordinary Kriging Estimation
4	fe2o3_ok	-99	float	Fe_2O_3 (%) Ordinary Kriging Estimation
5	cd_ok	-99	float	Cd (%) Ordinary Kriging Estimation
6	loi_ok	-99	float	LOI (%) Ordinary Kriging Estimation
7	cao_ok	-99	float	CaO (%) Ordinary Kriging Estimation
8	si_ok	-99	float	Si (%) Ordinary Kriging Estimation
9	k_ok	-99	float	K (%) Ordinary Kriging Estimation
10	keff	-99	float	P_2O_5 Kriging Efficiency from estimation
11	kslope	-99	float	P_2O_5 Slope of Regression from estimation
12	kvar	-99	float	P_2O_5 Kriging Variance from estimation
13	nholes_p2o5	-99	short	Number of holes used in P_2O_5 estimation
14	npass_p2o5	-99	short	Number of estimation passes for P_2O_5
15	nsamples_p2o5	-99	integer	Number of P_2O_5 samples used in estimate
16	distance_c	-99	float	Cartesian Distance to closest sample in estimation
17	distance_a	-99	double	Anisotropic distance to closest sample in estimation
18	pnum	-99	short	Estimation Pass Number
19	bednum	-99	short	Bed Number
20	bed	def	name	Bed Name
21	fault	def	name	Fault Block
22	faultzone	0	short	Flag for classification downgrade 1 = downgraded
23	class_int	-99	short	Resource Classification (Mea = 1, Ind = 2, Inf = 3 and Exp = 0)
24	class_txt	def	name	Resource Classification (Measured, Indicated or Inferred)
25	orename	def	name	Product classification name
26	orezone	def	name	Upper (UO) or Lower (LO) ore zone
27	oreclass	-99	short	Product classification number (1=ROM; 2=HiAl; 3=MGO; 4=BPLUS; 5=PLUS2)
28	orecolor	def	name	Product classification color (Red; Blue; White; Green; Orange; Waste; Waste_Ore)
29	orenumber	-99	integer	Number corresponding to ore color
30	materialnum	-99	short	Ore or Waste Number
31	material	def	name	Ore or Waste
32	bedding	-99	float	Design Parameter - Bedding angle
33	bench	-99	float	Design Parameter - Bench width
34	bfa	-99	float	Design Parameter - Bench Face angle
35	bheight	-99	float	Design Parameter - Bench height
36	ira	-99	float	Design Parameter - Inter-ramp angle
37	density_wet	-99	float	Material Density in t/cu.ft Wet Basis
38	density_dry	-99	double	Material Density in t/cu.ft Dry Basis

14.1.5.3 Sample Compositing

WSP performed a sample length analysis on the raw drill hole sample intervals and associated grade data to evaluate the relationship between sample lengths and grades on a by bed basis for NDR and H1SMC. Based on this evaluation, it was determined that the samples should be composited to a relatively equal length to reduce the potential for bias due to uneven sample lengths.

WSP composited the raw sample intervals for RVM, NDR and H1SMC to a run length of 2-feet based on a statistical analysis of the sample length distribution, analysis of P_2O_5 grade versus sample length, and bed thickness. Compositing was completed in Vulcan. All composites were constrained by the geological unit (i.e., composites were not allowed to span boundaries of units) with no overlaps. Composites with sample lengths less than the selected nominal composite length as dictated by the location of bed contacts were retained and used in the modeling and interpolation process. The raw sample length and composite length statistics, for all beds combined, by deposit are summarized in Table 14.14.

Table 14.14: Raw and Composite Sample Length Statistics

Deposit	Raw Sample Length (all units; feet)					Composite Sample Length (all units; feet)				
	Count	Mean	Mode	Min	Max	Count	Mean	Mode	Min	Max
RVM	11,793	2.0	2.0	0.5	21.3	6,892	3.5	4.0	0.1	4.0
NDR	4,728	4.7	2.0	0.1	108.0	11,748	1.9	2.0	0.0	2.5
H1SMC	21,877	2.0	2.0	0.4	10.0	22,164	2.0	2.0	0.0	2.5

A comparison of raw and composited grade parameters was performed to confirm that there were no material changes or biases to the data set introduced by the compositing process. The composited sample data was used as the basis for all spatial data analysis and grade model interpolation performed for RVM, NDR and H1SMC.

14.1.5.4 Grade Data Restrictions

WSP used the probability plots for each variable being modeled to determine if there were outlier values that should be capped prior to estimation. Capping limits were applied to four of the nine grade variables being modeled, and only for the H1SMC deposit. Table 14.15 summarizes the capping limits applied to the applicable variables.

Table 14.15: H1SMC Capping Limits Applied to CaO, Fe_2O_3, K, and Si

Deposit	CaO (%)	Fe_2O_3 (%)	K (%)	Si (%)
H1SMC	60.0	10.0	3.0	70.0

14.1.5.5 Density Determination and Moisture Basis

The density values used to convert volumes to tons for the NDR and H1SMC models were assigned using default values; a default of 0.074 short tons per cubic foot (st/cu.ft; wet basis, later converted to dry basis using a default moisture content of 11%) was applied to mineralized intervals for H1SMC and NDR.

The mean density values were calculated from 25 density samples collected from RVM and LCM. The density analyses were performed using the water displacement method for density determination, with values reported in wet basis. Density values were assigned for all geological units in the models, including mineralized units as well as overburden, interburden, and underburden waste units.

The application of assigned default densities introduces risk to the geological model and Mineral Resource estimation process, as it assumes that there will be minimal variability in density within each of the units across their spatial extents within the individual deposits.

The Conda geological models were developed using wet density data and dry basis grade data. Final wet short tons were converted to dry basis based on a default 11% moisture and the resultant estimated Mineral Resource tonnages are presented on a dry basis. The moisture content of 11% has been assumed based on typical moisture contents observed from Conda grade control sampling.

While the chosen default density and moisture parameters are deemed to be sufficient for the calculation of mass from volume and for the conversion of Mineral Resources from wet to dry basis, it is recommended that additional density and moisture should be collected and evaluated as part of future analytical programs.

14.1.6 Model Review and Validation

WSP performed internal reviews and validations of the two block models using a combination of visual inspection and statistical analysis checks between drill hole data and modeled surfaces, thicknesses, and grades. The

Conda geology and mining engineering team was also directly involved in the iterative model review process, providing feedback and guidance on numerous iterations of the block models.

Visual inspection included review of regularly spaced sections through the block models. Along with visual validation via sections and plans, drill hole and model values were compared statistically using summary statistics of the drill hole data against the model values.

WSP also estimated grade variables by both OK and nearest neighbor (NN) and compared the results against the composited data set in a series of statistical tables and swath plots. An example of the swath plot analysis and corresponding table for P_2O_5 is illustrated in Figure 14.5 and Table 14.16 for NDR and Figure 14.6 and Table 14.17 for H1SMC.

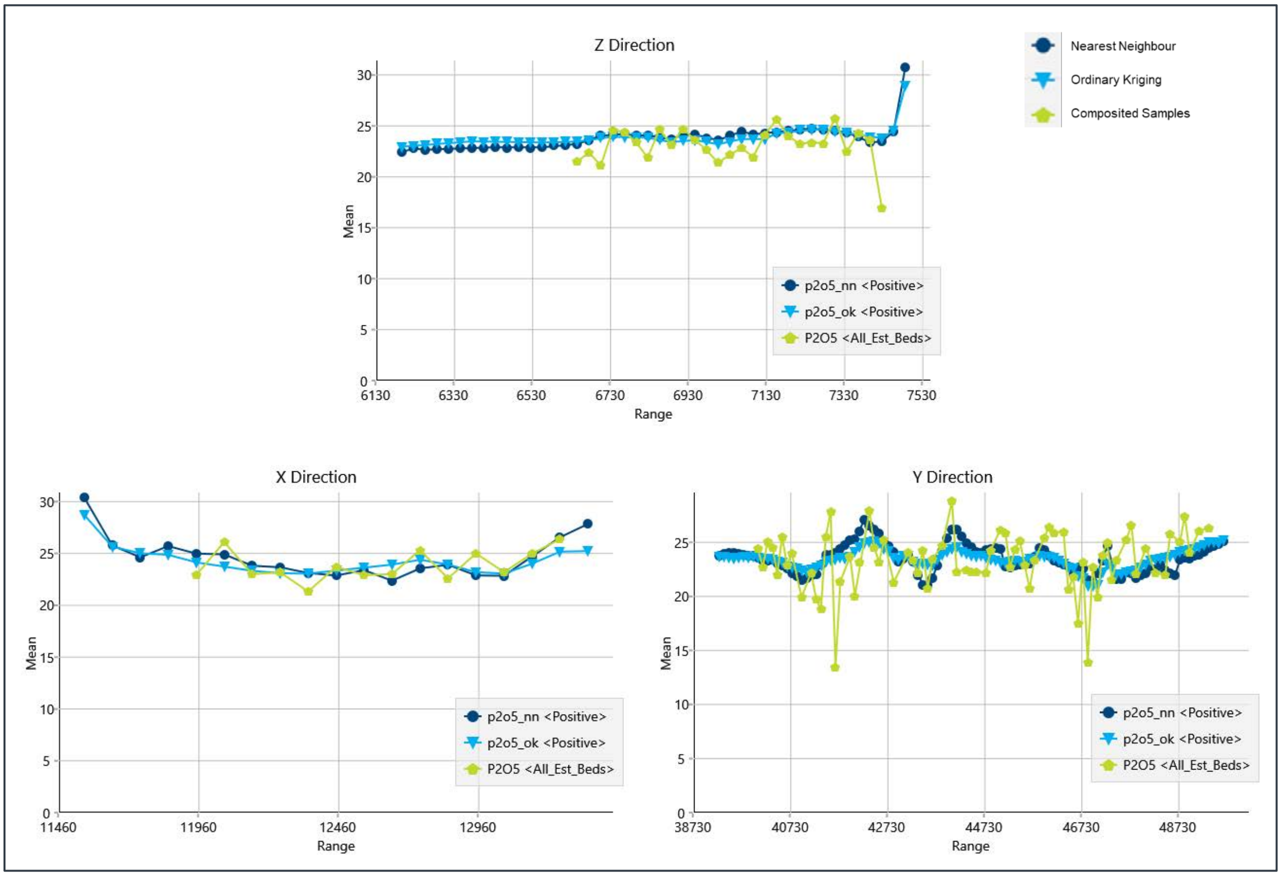


Figure 14.5: P_2O_5 Estimation Validation Swath Plot for NDR

Table 14.16: P_2O_5 Composites vs Block Model Estimation Comparison for NDR

Variable	Source	Count	Mean
P_2O_5 Samples	ndrp2o5_ex_2ft.cmp.isis	7,716	23.191
P_2O_5 NN	ndr_working_v4.bmf	2,186,804	23.458
P_2O_5 OK	ndr_working_v4.bmf	2,186,798	23.58
		Variance	-0.52%

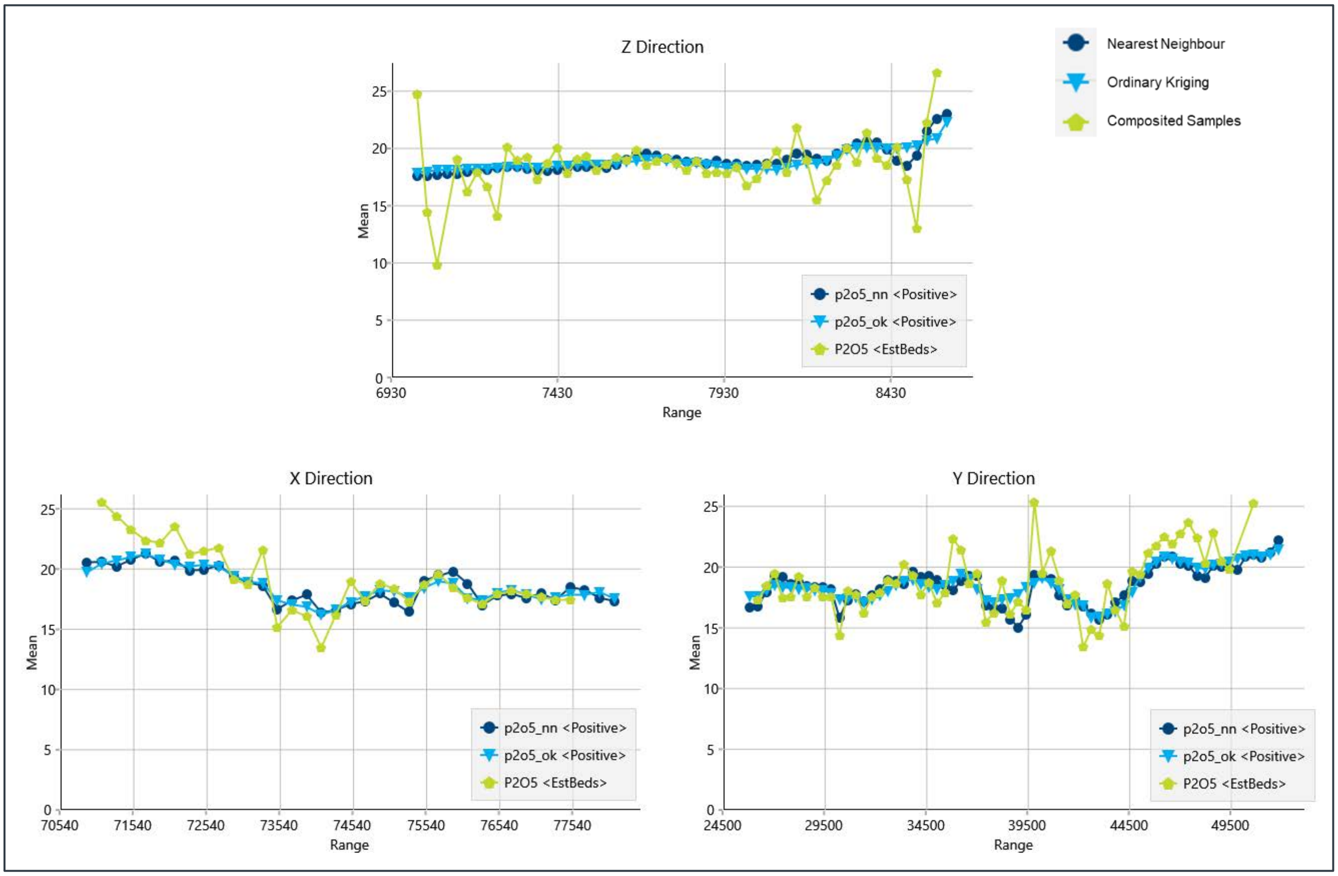


Figure 14.6: P_2O_5 Estimation Validation Swath Plot for H1SMC

Table 14.17: P_2O_5 Composites vs Block Model Estimation Comparison for H1SMC

Variable	Source	Count	Mean
P_2O_5 Samples	husp2o5_2ft_ex.cmp.isis	13,579	18.583
P_2O_5 NN	conda_h1smc_working_v6.bmf	8,390,972	18.442
P_2O_5 OK	conda_h1smc_working_v6.bmf	8,390,933	18.483
		Variance	0.54%

As RVM is currently in production, WSP performed reconciliation evaluation for a small area within the RVM pit using production data and surfaces provided by Conda mining engineering personnel.

Reconciliation results for RVM are presented in Table 14.18. It should be noted that the reconciliations performed are a comparison of resource tons, free of mining losses, added dilution and other mining factors, compared to actual production tons that would have involved selective mining via in pit grade control as well as other mining factors that impact the tons and grades extracted.

Table 14.18: RVM Model vs. Production Reconciliation – June 2019

RVM Reconciliation	Mineralized Tons (wet st)	P_2O_5 (%)	MgO (%)	Al_2O_3 (%)	Fe_2O_3(%)
Model	796,327	27.07	1.04	2.21	0.99
Production	925,045	26.96	1.05	1.75	0.84
Difference	128,718	-0.11	0.01	-0.46	-0.15
Relative Difference	14%	0%	1%	-26%	-17%

The RVM production data (data from January 2018 through end of month June 2019 was used) returned 14% more tons when reconciled against the WSP RVM model; P_2O_5 and MgO grades were within 1% relative difference between the model and production data, while there was a 17% relative difference on Fe_2O_3 and 26% relative difference on Al_2O_3.

The tonnage difference for the RVM reconciliation is attributed to the small sample size (less than 1 million tons total) as well as sparse data in the south end of the model, which resulted in broader extrapolation of grades in this area of the model.

The grade differences for MgO, Al_2O_3 and Fe_2O_3 in both model reconciliations are attributable to the impact of slight changes on very small numbers (all range between 0.5% and 2.2%) and are not considered material.

While the RVM reconciliations both returned differences between the updated models and the production results, upon review, WSP did not make any changes to the model based on the results of the reconciliation. It is recommended that the models continue to be evaluated against mine mapping and grade control data and that reconciliation calculations be performed regularly to evaluate the models against actuals.

Reconciliation evaluations were not performed for the NDR and H1SMC deposits as both are advanced exploration projects and have not had any current or historical production activity.

14.2 Mineral Resource Estimation

This sub-item contains forward-looking information related to Mineral Resource estimates for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the material factors or assumptions that were set forth in this sub-item including geological and grade interpretations and controls and assumptions and forecasts associated with establishing the prospects for economic extraction.

14.2.1 Basis for Mineral Resource Estimate

The basis of the Mineral Resource estimates for the Conda projects and the methods in which they were prepared are summarized in this Item. For estimating the Mineral Resources for the Conda projects, WSP has applied the definition of “Mineral Resource” as set forth in the Canadian Institute of Mining, Metallurgy, and Petroleum Council (CIM) Definitions Standards adopted May 10, 2014 (CIMDS).

Under CIMDS, a Mineral Resource is defined as:

> “… a concentration or occurrence of solid material of economic interest in or on the Earth’s crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.”

A Mineral Resource can be estimated for material where the geological characteristics and continuity are known or reasonably assumed and where there is a potential for production at a profit.

Mineral Resources are subdivided into categories of Measured, Indicated, and Inferred, with the level of confidence reducing with each category respectively. Mineral Resources are always reported as in-situ tonnage and are not adjusted for mining losses or mining recovery.

The Mineral Resource estimates presented herein were prepared under the supervision of WSP’s QP in accordance with the definitions presented in NI 43-101 and the CIM Definition Standards. The estimates were based on geological and grade block models generated from all verified exploration drill holes and analytical samples drilled by the Company to date for the RVM, NDR and H1SMC properties.

Data verification was performed under the supervision of the WSP QP while exploration data collection was performed under the supervision of Itafos personnel that also met the standard for QPs under the applicable definitions.

The WSP QP used the verified exploration and sample data to construct a computer-based geological block model of the in-situ phosphate deposit and surrounding rocks and a P_2O_5 grade model for each of the RVM, NDR and H1SMC projects. The RVM, NDR and H1SMC individual geological models were based on a structural interpretation of the deposits based on drilling intervals through the deposits. The grade models consisted of estimated grades within each geological block identified as in-situ phosphate. The block model grades were interpolated from sample values of drill hole intervals.

14.2.2 Limits and Constraints on the Mineral Resource Estimates

The Mineral Resources presented in this Item have been estimated by applying a series of physical and geological limits as well as high-level mining and economic constraints; the mining and economic constraints were limited only to a level sufficient to support reasonable prospects for future economic extraction of the estimated resources. A summary is as follows of the key constraints on the Mineral Resource estimates by type:

- Physical Limits:
  - Lease boundaries.
  - Topography.
  - Existing roads, utilities, ex-pit dumps, and other surface infrastructure in place at the current mining operations at RVM as directed by Conda.
- Geological Limits:
  - Base of alluvium.
  - Modeled roof and floor contacts of the individual beds.
  - Water table.
- Mining and Economic Constraints:
  - Resource categorization parameters based on distance from point of observation and drill hole sample count criteria.
  - Reasonable basic mining parameters and cost assumptions were applied to develop resource pit shells for the Conda projects for the purpose of establishing reasonable prospects for future economic extraction. No formal mine design or economic analyses were performed as part of the resource evaluation process.
  - A 20% minimum P_2O_5 grade for the Conda projects based on current CPP specifications.

14.2.3 Mineral Resource Classification and Categorization

Mineral Resource classification and categorization assigned to the Mineral Resource estimates as presented in this TR were in accordance with NI 43-101, which provides for the classification of a mineral deposit into Mineral Resources and/or Mineral Reserves. Under the NI 43-101 definitions, Mineral Resources should be estimated and categorized under Measured, Indicated and/or Inferred categories, as applicable given the confidence of the estimator in the basis of the estimates. NI 43-101 requires the disclosure of these categories of Mineral Resources in technical reports.

Both Mineral Resources and Mineral Reserves have been estimated for RVM, NDR and H1SMC. Current Mineral Reserves are presented in Item 15.0.

The Mineral Resource categorization applied by WSP has included the consideration of data reliability, spatial distribution and abundance of data, and continuity of geology and grade parameters. WSP performed a statistical and geostatistical analysis for evaluating the confidence of continuity of the geological units and grade parameters. The results of this analysis were applied to developing the Mineral Resource categorization criteria.

Mineral Resource categorization criteria for NDR and H1SMC are summarized in Table 14.19. Blocks that fell within the 50-foot buffer around a fault were downgraded to the next category.

Table 14.19: Mineral Resource Classification

Deposit	Resource Category	Classification Criteria	
		Distance from Drill Hole	Minimum Number of Holes
RVM	Measured	≤ 150 ft	N/A*
	Indicated	> 150 ft and ≤ 300 ft	N/A*
	Inferred	> 300 ft and ≤ 600 ft	N/A*
NDR	Measured	≤ 375 ft	2 or more
	Indicated	> 375 ft and ≤ 750 ft	2 or more
	Inferred	> 750 ft and ≤ 1,500 ft	none
H1SMC	Measured	≤ 625 ft	2 or more
	Indicated	> 625 ft and ≤ 1,250 ft	2 or more
	Inferred	> 1,250 ft and ≤ 2,500 ft	none

Notes: *Sample/drill hole restrictions were not applied for RVM as there was abundant well-spaced drilling and sampling.

The volumes, tons, and grades for the categorized Mineral Resource estimates were then tabulated by mineralized beds for RVM, NDR and H1SMC. The estimates and their summary tabulations were reviewed by the WSP QP prior to stating the Mineral Resources as presented in Item 14.0 of this TR.

It is the WSP QP's view that the classification criteria applied to the Mineral Resource estimate are appropriate for the reliability and spatial distribution of the base data and reflect the confidence of continuity of the modeled geology and grade parameters.

14.2.4 Reasonable Prospects for Economic Extraction

The Mineral Resource estimates for the potentially surface mineable resources at RVM, NDR and H1SMC were constrained by conceptual resource pit shells for the purpose of establishing reasonable prospects of eventual economic extraction based on potential mining, metallurgical and processing grade parameters identified by mining, metallurgical, and processing studies performed to date on the Project.

Key constraint inputs included reasonable assumptions for operating costs, CRU International Ltd. (CRU) fertilizer product forecast prices, and a 20% minimum P_2O_5 grade, based on current CPP specifications, for all estimated resources.

Further details of the Mineral Resource justification for Conda are provided in the following Item 14.2.4.1.

14.2.4.1 RVM, NDR and H1SMC Resource Pit Shells

WSP utilized Vulcan Pit Optimizer software to develop the resource pit shells. Vulcan Pit Optimizer uses the Lerch Grossman (LG) algorithm, along with the user defined input parameters and constraints, to assign a value to each block within a block model, to produce pit shells for selected commodity prices.

Given that RVM is an actively producing mine, surface constraints such as existing roads, utilities, infrastructure, and other mine related structures were applied along with the lease boundaries as constraints to the resource shells. The Vulcan Pit Optimization program was used with the input parameters as presented in Table 14.20 to provide guidance to establishing reasonable prospects of eventual economic extraction.

Table 14.20: Resource Pit Shell Input Parameters by Deposit

Parameter	Unit	RVM	NDR	H1SMC
Waste Mining Cost	\$/st (wet)	3.80	3.06	3.06
Plant Feed Mining Cost	\$/st (wet)	7.20	4.61	4.61
Stockpiling Cost[1]	\$/st (wet)	9.20	11.21	11.21
Mining Recovery	%	100	100	100
Mining Dilution	%	0	0	0
Beneficiation Cost	\$/st (wet)	6.20	4.55	6.15
P_2O_5 Beneficiation Recovery	%	81.00	79.69	78.60

Notes:

1. Includes the cost to rehandle the plant feed into the tipple and transport to the plant stockpile + UP rail transport royalty + stockpile rehandle at the plant. RVM costs are from 2019 and have not been updated for 2023.

The resource pits were developed using a LG pit optimization process to define limit of reasonable prospects for economic extraction. The value of the ore that was input into the LG was based on the Gross Margins Available (GMA), which was calculated as the revenue minus the costs at the point at which the valuation was considered. Dividing the GMA and by the applicable tons provides the breakeven value at the point of consideration. WSP evaluated the GMA at two points as follows.

- At the point where the beneficiated rock is transferred to the fertilizer plant

  <u>Value of P_2O_5 in Rock (concentrate)</u>

  (Revenue - fertilizer plant costs) / tons of P_2O_5 in concentrate = \$416.53/ dry ton washed P_2O_5 (H1SMC) and \$416.53/ dry ton washed P_2O_5 (NDR)

- Mined ore FOB rail at the tipple

  <u>Value of P_2O_5 in Ore</u>

  (Revenue - fertilizer plant costs - beneficiation plant costs - shipping cost) / tons of P_2O_5 in ore = \$345/ dry ton P_2O_5 (H1SMC) and \$347/ dry ton P_2O_5 (NDR)

Both methods can be used to estimate the total net value of the fertilizer products sold by multiplying the contained P_2O_5 tons by the associated GMA. It does not matter where the valuation is done so long as it properly accounts for the downstream costs. WSP initially used the value of P_2O_5 contained in the rock (concentrate) to run the pit optimizations for mineral resources. However, to limit the costing information supplied in the TR, WSP reported the equivalent value of P_2O_5 in ore.

The Mineral Resource pit shells were run at the GMA for the P_2O_5 in beneficiated rock. As noted above, the GMA at this point represents the remaining revenue left for mining, stockpiling, rail haulage, royalties, and beneficiation after applying the revenue for phosphate products minus the chemical plant costs. It should be noted that the GMA could be assigned and calculated at other stages of production, such as on ore tonnage delivered to the stockpiles. However, the resulting optimized pit would be the same as it is based on the value of the ore in the ore blocks and the cost in the associated waste blocks and this does not change when the point the GMA is changed. The GMA calculated at the tipple is used to avoid disclosing the costs and revenues past the beneficiation plant.

Using the parameters described above produces a revenue factor (RF) pit shell at 1.0 for both NDR and H1SMC. Additional pit shells were then produced for each deposit by varying the GMA to generate Mineral Resource pit shells at varying RF's. The additional RF resource pit shells that were produced ranged from 0.2 to 2.0 in increments of 0.1.

Based on an analysis of the resource shell options with Conda senior mining and geology personnel, the WSP QP selected the following RF resource pit shells:

- RVM: RF1.2 or $480.00 / dry ton of washed P_2O_5 in beneficiated rock GMA (per the 2019 TR)
- NDR: RF1.2 or $499.84 / dry ton of washed P_2O_5 in beneficiated rock GMA
- H1SMC: RF1.2 or $499.84 / dry ton of washed P_2O_5 in beneficiated rock GMA

It should be noted that the values reported in the TR were based on the value of P_2O_5 in the ore delivered to the tipple.

14.2.5 Mineral Resource Statement

The categorized estimated Mineral Resources for RVM, NDR, and H1SMC are presented in Table 14.21. Mineral Resource categorization of Measured, Indicated, and Inferred Mineral Resources presented in Table 14.21 is in accordance with the CIM definition standards (CIMDS, 2014). The Effective Date of the Mineral Resource Estimate is July 1, 2023

From the effective Mineral Resource date of July 1, 2023, until the date of this report November 16, 2023, the QP is not aware of any material changes that would affect the resource model or Mineral Resource estimate.

Note to readers: The Mineral Resources presented in this Item are not Mineral Reserves and do not reflect demonstrated economic viability. The reported Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. There is no certainty that all or any part of this Mineral Resource will be converted into Mineral Reserve. All figures are rounded to reflect the relative accuracy of the estimates and totals may not add correctly.

Based on the geological results presented in this TR, supported by the active mining operations at Conda, mine design, and modifying factors studies currently underway for the various projects, it is the WSP QP's opinion that the Mineral Resources have reasonable prospects for eventual economic extraction based on the criteria presented in Item 14.0 of this TR.

Current Mineral Reserves are presented in Item 15.0 of this TR.

Table 14.21: Summary of Estimated Mineral Resources – Effective Date: July 1, 2023

Project	Zone	Resource Classification	Volume (millions; bcf)	Short Tons (millions; wet)	Short Tons (millions; dry)	P_2O_5 (wt.%)	MgO (wt.%)	Fe_2O_3 (wt.%)	Al_2O_3 (wt.%)
RVM	UPZ & LPZ Combined	Measured	79.1	5.9	5.3	25.87	0.88	0.88	2.52
		Indicated	9.7	0.7	0.6	25.89	0.57	0.97	2.68
		Measured + Indicated	**88.8**	**6.6**	**5.9**	**25.87**	**0.84**	**0.89**	**2.53**
		Inferred	0.3	0.02	0.02	26.67	0.36	0.83	2.34
NDR	UPZ & LPZ Combined	Measured	72.1	5.3	4.7	26.74	0.83	1.27	2.61
		Indicated	21.6	1.6	1.4	26.42	0.79	1.26	2.46
		Measured + Indicated	**93.8**	**6.9**	**6.2**	**26.66**	**0.82**	**1.27**	**2.57**
		Inferred	0.7	0.05	0.05	25.87	0.39	1.24	2.47
H1SMC	UPZ & LPZ Combined	Measured	372.9	27.6	24.6	24.29	1.01	0.85	2.27
		Indicated	125.6	9.3	8.3	24.24	1.04	0.83	2.16
		Measured + Indicated	**498.5**	**36.9**	**32.8**	**24.27**	**1.02**	**0.85**	**2.24**
		Inferred	21.6	1.6	1.4	24.67	0.91	0.84	2.14
Totals	UPZ & LPZ Combined	Measured	524.1	38.8	34.6	24.86	0.97	0.91	2.36
		Indicated	157.0	11.6	10.3	24.64	0.98	0.90	2.23
		Measured + Indicated	**681.1**	**50.4**	**44.9**	**24.81**	**0.97**	**0.91**	**2.33**
		Inferred	22.6	1.7	1.5	24.73	0.89	0.86	2.16

Notes:

1. RVM = Rasmussen Valley Mine, NDR = North Dry Ridge Project; H1SMC = Husky1 South Maybe Canyon Project; UPZ = Upper Phosphate Zone; LPZ = Lower Phosphate Zone; bcf = bank cubic feet; wt.% = weight percent.
2. Mineral Resource categorization of Measured, Indicated and Inferred Mineral Resources presented in the summary table is in accordance with the CIM definition standards (CIMDS, 2014).
3. The Mineral Resources presented are reported on both wet and dry in-situ basis. Masses for the Conda projects have been converted from wet to dry basis using a 11% moisture factor.
4. Mineral Resource grades are presented in dry in-situ basis.
5. No recovery, dilution or other similar mining parameters have been applied.
6. Although the Mineral Resources presented in this TR are believed to have a reasonable expectation of being extracted economically, they are not Mineral Reserves. Estimation of Mineral Reserves requires the application of modifying factors and a minimum of a PFS. The modifying factors include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors.
7. For both projects, the reported Inferred Mineral Resources are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves.
8. There is no certainty that all or any part of this Mineral Resource will be converted into Mineral Reserve.
9. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. All figures are rounded to reflect the relative accuracy of the estimates.
10. The Mineral Resource estimates for the potentially surface mineable resources (NDR and H1SMC) were constrained by conceptual pit shells for the purpose of establishing reasonable prospects of eventual economic extraction based on potential mining, metallurgical and processing grade parameters identified by studies performed to date on the Project.
11. Key constraint inputs included reasonable assumptions for operating costs, CRU fertilizer product forecast prices and a 20% minimum P_2O_5 grade for the Conda projects, based on current CPP specifications for all estimated resources.

The Mineral Resource estimates presented in this TR are based on the factors related to the geological and grade models, and the criteria for reasonable prospects of eventual economic extraction presented in Item 14.1 and Item 14.2, respectively, of this TR. The Mineral Resource estimates may be affected positively or negatively by additional exploration that expands the geological database and models of mineralized zones for the individual deposit areas. The Mineral Resource estimates could also be materially affected by any significant changes in the assumptions regarding forecast prices, costs, or other economic factors that were used in the resource pit shell development process. If the price assumptions are decreased or the assumed costs increased significantly, then the minimum P_2O_5 grade must be increased and, if so, the potential impacts on the Mineral Resource estimates would likely be material and need to be re-evaluated.

The Mineral Resource estimates for RVM, NDR and H1SMC are also based on assumptions that a mining project may be developed, permitted, constructed, and operated at each of these individual advanced exploration properties. Any material changes in these assumptions would materially and adversely affect the Mineral Resource estimates for these deposits; potentially reducing to zero. Examples of such material changes include extraordinary time required to complete or perform any required activities, or unexpected and excessive taxation or regulation of mining activities that become applicable to any proposed mining projects. Except as described in this report, the WSP QP does not know of environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimates.

15.0 MINERAL RESERVE ESTIMATES

This Item contains forward-looking information related to mineral reserve estimates for the Conda Projects. The factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: mineral resource model tons and grade, modifying factors including mining and recovery factors, production rate and schedule, commodities market and prices, completion of required infrastructure necessary to support the reserves, finalization of Records of Decision (ROD) and all other material factors and assumptions described in this report.

This Item discloses Mineral Reserve estimates for the RVM, H1SMC, and NDR mines and summarizes the methods used to calculate these values as well as the extent to which the estimates could be materially affected by mining, metallurgical, infrastructure, permitting, and other relevant factors. The estimated Mineral Reserves are in accordance with the definition of "Mineral Reserve" as set forth in the CIMDS adopted May 10, 2014. Under CIMDS, a Mineral Reserve is defined as:

> "… is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at the Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.
>
> The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.
>
> The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study."

CIM defines Modifying Factors as "considerations used to convert Mineral Resources into Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors." Modifying Factors used to convert Mineral Resources to Mineral Reserves are discussed In Item 15.1.

Mineral Reserves are subdivided into classes of Probable Mineral Reserves and Proven Mineral Reserves, which correspond to Indicated and Measured Mineral Resources, respectively, with the level of confidence increasing with each class. The CIM has defined Mineral Reserves in *The CIM Definition Standards for Mineral Resources and Reserves* (2014) as:

1. **Probable Mineral Reserve**: the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proven Mineral Reserve.
2. **Proven Mineral Reserve**: the economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors.

15.1 Key Assumptions, Parameters, and Methods

The following key assumptions, parameters, and methods describe how the mineral resources were converted to mineral reserves. To estimate Mineral Reserves, preliminary feasibility studies (PFS) were prepared including open pit mine designs and mining plans for RVM, H1SMC, and NDR. The Conda team obtained a ROD for the 2020 mine plan and alternatives evaluated through NEPA. This included backfilling the North and South Maybe Canyon mine. The mining plans included annual stripping and ore production quantities. Annual production costs were estimated based on the mine plan quantities, open pit mining methods, equipment fleets in use, and unit prices stated in the current mining contract. The mining plans and cost estimates were developed to a PFS level of detail. The open pit mine designs, mining plans, and production schedules are summarized in Item 16.0. of this report. The annual production and capital cost estimates are summarized in Item 21.0. and an economic analysis of the mining and production plan is summarized in Item 22.0.

Currently, the Conda operations supply phosphate ore exclusively to the CPP, and there is no open market price in SE ID for the ore. The CPP pays all costs of production including royalties and costs to stockpile and load UPRR rail cars for transport to the CPP. To determine an economic mining limit under these circumstances, a GMA per dry ton of P_2O_5 was estimated FOB Rail car at the WV Tipple (RVM) and the Dry Valley Tipple (H1SMC/NDR). The GMA was estimated to be the sum of the fertilizer product prices to be produced and sold by the CPP minus all costs of manufacturing the fertilizers, handling, and washing the phosphate ores received at the CPP, and rail freight costs for delivering the mined phosphate ores. The GMA is the maximum cash price that the CPP could pay for mined phosphate ore FOB Rail car at the Tipple to break even on the transaction. See Item 19.2 for additional details on the estimated GMAs for mined phosphate ore from the Conda projects.

The economic limits of the RVM, H1SMC, and NDR open pits were determined using Vulcan Pit Optimizer software applied to the RVM, H1SMC, and NDR geological block models described in Item 14.1. The Vulcan Pit Optimizer software uses the industry standard Lerch Grossman algorithm to assign an economic value to each block based on user defined unit costs and other relevant input parameters and constraints such as mining recovery and other mining modifying factor assumptions for mineral resource blocks. For a given revenue, or in this case GMA assumption, the pit optimization process produces a pit shell that includes all economic mineral resource blocks within the limits of the pit shell. Economic mineral resource blocks are those blocks with a positive value at the assumed revenue parameters.

Modifying factors used to determine geological block model values in the pit optimizations are shown in Table 15.1. A 97% mining recovery was applied during the pit optimization process. As discussed in Items 9.0 and 10.0, the method used for collecting grade samples was reverse circulation (RC) drilling. This reverse circulation method induces dilution of the sample data and, as such, an additional dilution factor was not incorporated into the block model. Historical data confirms that an additional mining dilution factor is not appropriate to convert Resources to Reserves.

Table 15.1: Modifying Factors for Determining Geological Block Values (as of July 1, 2023)

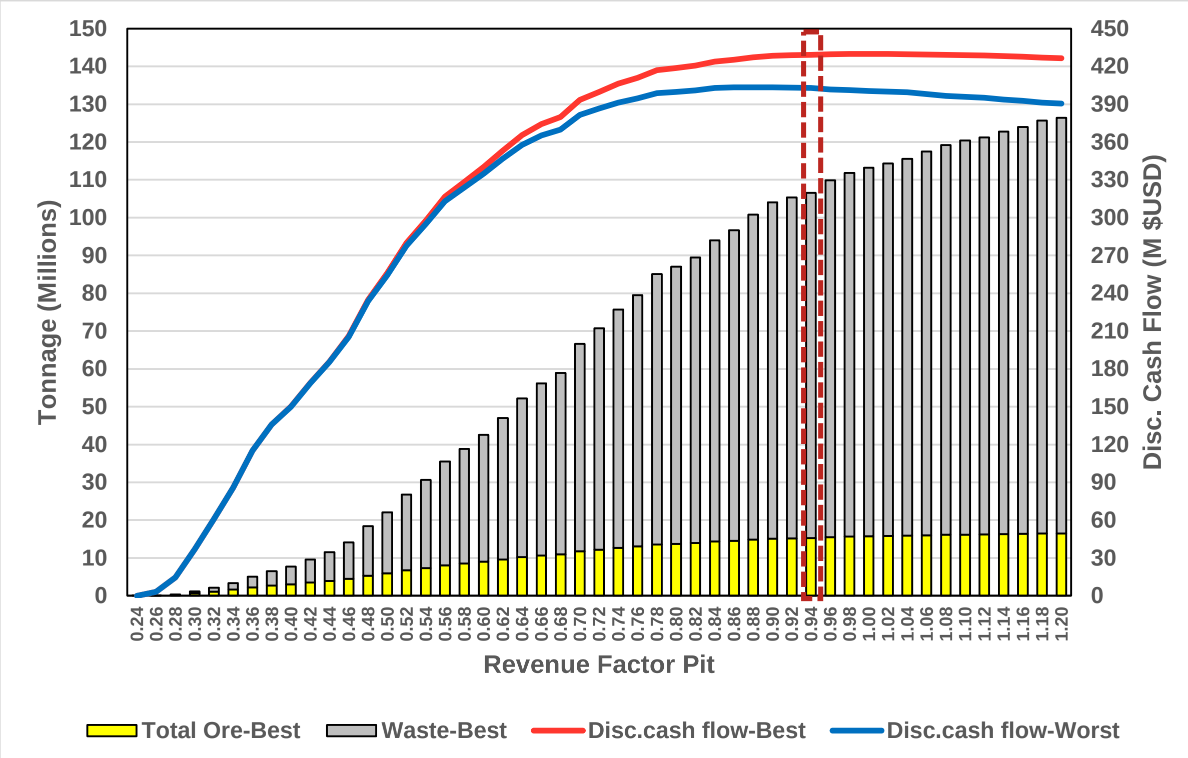
Modifying Factor	Unit	RVM[4]	H1SMC	NDR
Rock Mining Cost	$/t (wet)	3.83	3.06	3.06
Ore Mining Cost	$/t (wet)	7.27	4.61	4.61
Shipping Cost[1]	$/t (wet)	1.32	11.21	11.21
Royalty Cost[2]	$/t (wet)	1.70	2.48	2.59
Metallurgical Recovery	%	81.00%	78.60%	79.69%
Mass Recovery	%	68.00%	64.30%	68.11%
Gross Margin Availble per P_2O_5 ton FOB Tipple	$/t (dry) P_2O_5	271.00	345.00	358.00
Mining Recovery[3]	%	97%	97%	97%
Mining Dilution	%	0%	0%	0%

Notes:
1. Includes the cost to rehandle the ore from the stockpile into the tipple (rail loadout facility) and estimated federal royalties of $1.82/t for H1SMC and NDR.
2. Royalty cost varies with grade and averages $1.70/t (wet) for RVM. As of August 2023, based on the average grade of H1SMC and NDR, the Royalty costs are currently expected to be $2.48/t and $2.59/t, respectively; these royalty rates are reflected in the economic analysis.
3. For RVM, the Mining Recovery was not applied to the pit optimizations but was instead applied during the mine scheduling process.
4. The RVM Pit optimization values are based on the 2019 PFS. A new pit optimization for RVM was not conducted in 2023.

Additional constraints applied during the pit optimization processes were as follows for each project.

- RVM, H1, and NDR:
  - Mineral resource blocks classified as Measured or Indicated and with P_2O_5 grades greater than or equal to 20% were assumed to be potential mill feed. All other material was designated as overburden or interburden rock.
- RVM Only:
  - The existing RVM access road located on the west side of the RVM pit and continuing to the LCM pit was considered a constraint.
  - The southeast pit limit at the 8,000-foot northing (mine grid) which is the approximate boundary of a portion of the Idaho State Wildlife Management Area was used to constrain the pit shells.
- H1SMC:
  - The northern extent of the H1SMC pit was limited to 49,650 northing (mine grid) due to avoid disturbance on the Cross Valley Fill material
- NDR:
  - A portion on the northeast portion of the potential mining area was excluded because Conda wanted to avoid mining on the wildlife management area

The results of the pit optimizations for RVM, NDR, and H1SMC are shown in Figure 15.1, Figure 15.2, and Figure 15.3, respectively. For RVM, the Revenue Factor 0.94 pit was chosen as the basis for the ultimate pit design. For both NDR and H1SMC, the Revenue Factor 0.98 pits were chosen as the basis for the ultimate pit design.



Note: This pit optimization was conducted in 2019 for the RVM PFS and was not updated in 2023.

Figure 15.1: RVM Pit Optimization Results

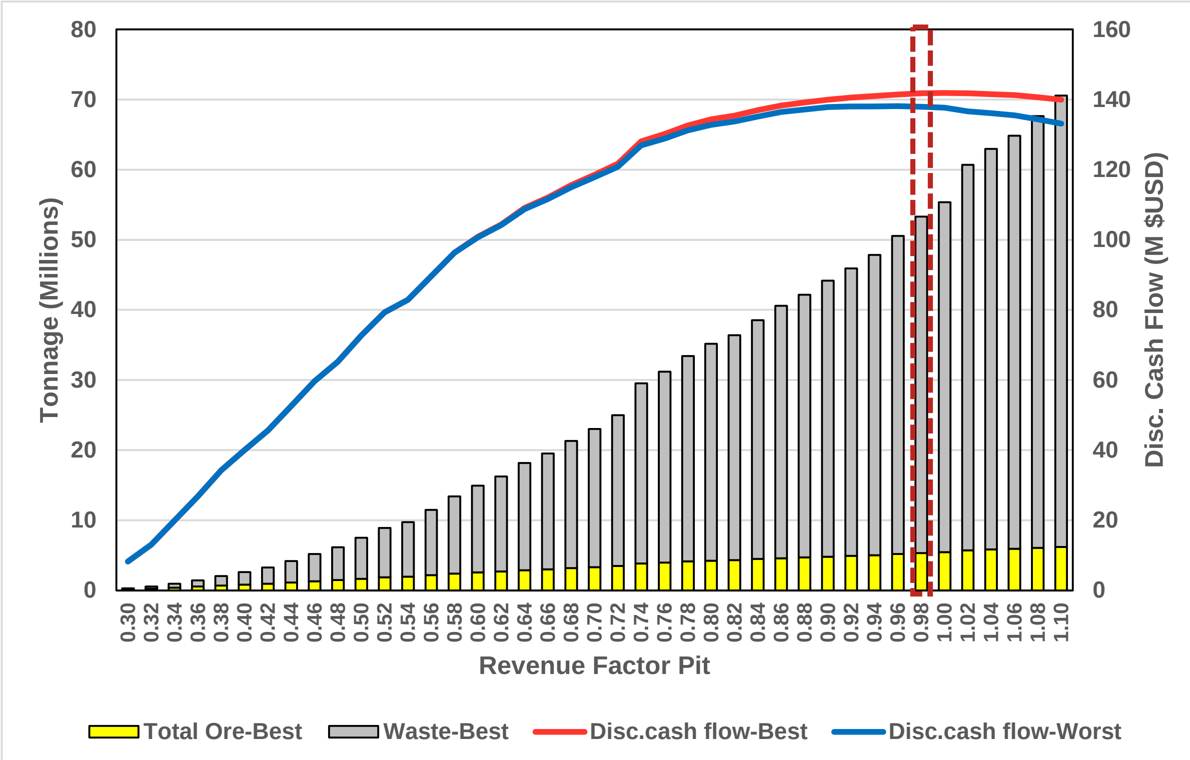


Figure 15.2: NDR Reserve Pit Optimization Results

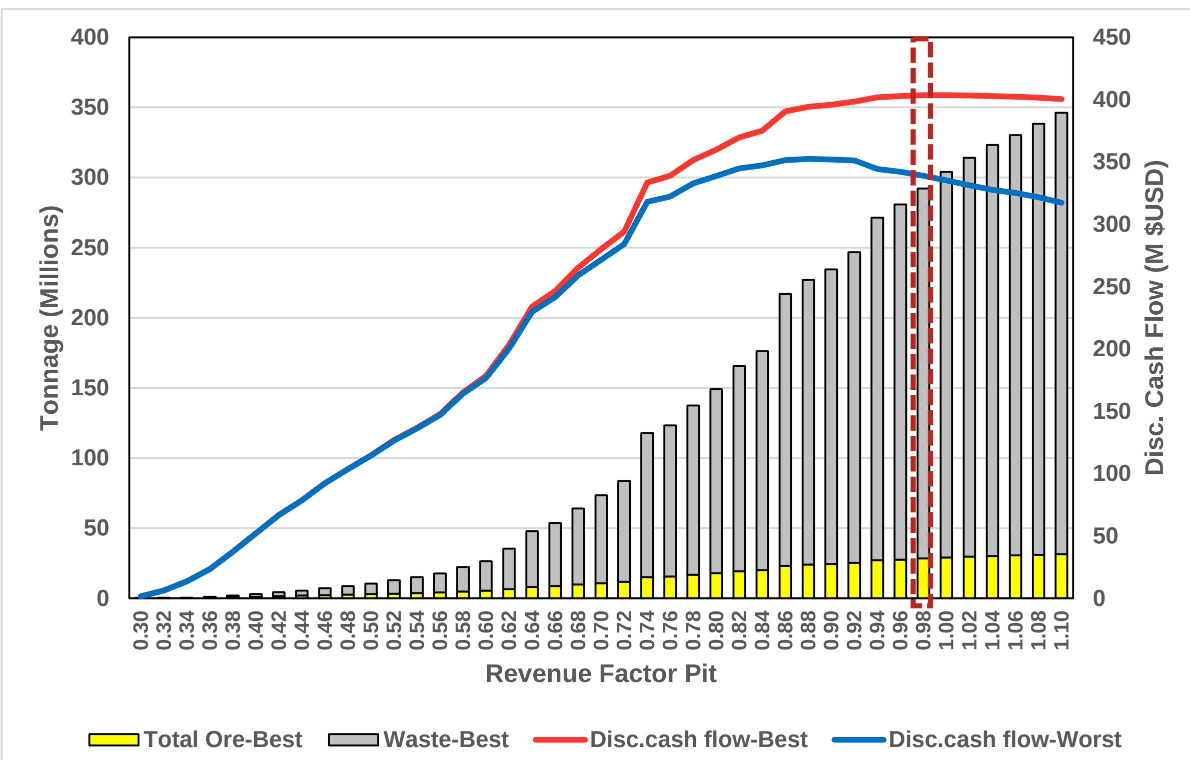


Figure 15.3: H1SMC Reserve Pit Optimization Results

Using the pit optimization processes, economic pit shells were defined for RVM, H1SMC, and NDR. The pit shells were then used to limit simulated mining sequences planned within each pit shell. Prior to sequencing, WSP applied a mining loss of 3% to the designated Mineral Resource blocks within the pit shell based on the following discussion.

For RVM, H1SMC, and NDR, WSP reviewed the Conda production data along with the geological model described in Item 14.0 and concluded the following about ore loss / mining recovery and dilution. WSP is aware that RC drilling samples are collected at 2-ft intervals. This induces dilution of the sample data. Because the RC data was utilized in the construction of the 2019 block model for RVM and the 2023 block models for H1SMC and NDR, additional grade dilution was not recommended.

To account for the ore loss that may occur due to handling of the ore, WSP assumed a mining loss of 3%. Based on the site visits, WSP observed that the mining operations manage ore loss in the following ways:

- Trench delineation of the ore and overburden contacts is used to survey, stake, and flag the contacts.
- Excavators stop short of the ore contacts.
- Dozers with specially outfitted side blades are used to closely follow the bedding orientation, shaving layers to separate the ore and overburden to minimize mining loss and dilution.
- Excavators with bucket sizes from 5 cy to 22 cy are used to load ore piles placed and precisely segregated by ore bed using the dozer method.
- Stockpiles are surveyed and the ore technicians are present to direct and observe the dozing and excavating of the ore.
- Ore technicians also delineate each bed of ore and interburden and collect samples to reconcile the resource model.

Based on the mining sequence, overburden, interburden, and Mineral Resource blocks were aggregated to produce estimated annual overburden and ore quantities and average ore grades. Based on the pit advance and blocks sequenced each year, production costs were estimated for the mining operation. See Items 16.0 and 21.0 for further information on the mining plans and cost estimates, respectively.

Using the estimated capital and operating costs associated with the mine plans, an economic analysis was performed to demonstrate the economics of the phosphate ore produced in the mine plan, see Item 22.0. The discounted cash flow economic analysis demonstrated that the annual CPP transfer prices paid for the phosphate ore produced by the mine plan are all well within the GMAs to be paid for the ores on a per ton of P_2O_5 basis FOB railcar at the tipple. The estimated transfer prices to be paid for the RVM, H1SMC, and NDR ore produced and loaded in the mine plan cover all operating costs of ore production, stockpiling, and loading into rail cars, plus a margin sufficient to return all working capital and new capital invested; yield at least a 7% return on all capital invested; and cover all costs associated with final reclamation and mine closure after production ends. On this basis, the QP determined that forecast phosphate ore tons produced were economically viable and thus converted Mineral Resources within the RVM, H1SMC, and NDR block models into Mineral Reserves.

15.2 Estimated Mineral Reserves by Mine and Classification

Using the geological model, modifying factors and methods described in this report, the Measured and Indicated Mineral Resources described in Item 14.0 to the estimated Mineral Reserves shown in Table 15.2. The Mineral Resources stated in Item 14.0 are inclusive of the Mineral Reserve estimates shown in Table 15.2.

Table 15.2: Estimated Mineral Reserves - Effective Date (July 1, 2023)

Property	Reserve Classification	Volume (millions; bcf)	Short Tons (Millions, wet)[a,b]	Short Tons (Millions, dry)[a,b]	P_2O_5 (wt.%)[c]	MgO (wt.%)	Fe_2O_3 (wt.%)	Al_2O_3 (wt.%)
RVM	Proven	62.2	4.6	4.1	26.0	0.82	1.1	3.0
	Probable	2.9	0.2	0.2	26.0	0.82	1.2	3.2
	Proven + Probable	**65.1**	**4.8**	**4.3**	**26.0**	**0.82**	**1.1**	**3.0**
NDR[d]	Proven	56.2	4.2	3.7	26.7	0.82	1.3	2.7
	Probable	10.0	0.7	0.7	26.8	1.05	1.1	2.3
	Proven + Probable	**66.2**	**4.9**	**4.4**	**26.7**	**0.85**	**1.3**	**2.6**
H1SMC[e]	Proven	282.9	20.9	18.6	24.3	0.97	0.9	2.4
	Probable	74.1	5.5	4.9	24.5	0.97	0.9	2.2
	Proven + Probable	**356.9**	**26.4**	**23.5**	**24.3**	**0.97**	**0.9**	**2.3**
Stockpiles[f]	Proven	0.1	1.7	1.5	27.7	0.42	0.64	1.53
Totals	Proven	401.3	31.4	27.9	25.0	0.90	0.9	2.4
	Probable	87.0	6.4	5.7	24.8	0.97	0.9	2.2
	Proven + Probable	**488.3**	**37.8**	**33.7**	**25.0**	**0.91**	**0.9**	**2.4**

Notes:

a. A moisture content of 11% was assumed to convert from wet short tons to dry short tons.
b. A 97% mining recovery and 0% dilution was applied to the tons selected as ore.
c. A P_2O_5 cutoff grade of 20% was assigned as the minimum grade to be considered ore. Grades are reported in dry basis.
d. A pit optimization analysis was performed on the H1SMC deposit, which incorporated the geotechnical parameters, mining costs of $3.06/t wet overburden, $4.61/t wet ore, ore stockpiling and shipping costs of $11.21/t wet. A Gross Margin available per mined P_2O_5 ton (applied at the point of exchange of the tipple) of $357.73/t dry ton recovered P_2O_5 was used to define the limits of the mining pit. The total processing costs are not disclosed in this report but are higher for H1SMC relative to NDR due to an MgO reduction circuit required for H1SMC.
e. A pit optimization analysis was performed on the NDR deposit, which incorporated the geotechnical parameters, mining costs of $3.06/t wet overburden, $4.61/t wet ore, ore stockpiling and shipping costs of $11.21/t wet. A Gross Margin available per mined P_2O_5 ton (applied at the point of exchange of the tipple) of $345.01/t dry ton recovered P_2O_5 was used to define the limits of the mining pits. The total processing costs are not disclosed in this report but are higher for H1SMC relative to NDR due to an MgO reduction circuit required for H1SMC.
f. All stockpiles, which includes WV Tipple and plant stockpiles, total dry tons, and average P_2O_5 grades are displayed.

The estimated Mineral Reserves stated in Table 15.2 comply with all disclosure requirements for mineral reserves set out in NI 43-101, including NI 43-101 Items 2.2, 2.3, and 2.4.

15.3 Potential Impacts to Mineral Reserve Estimates

The extent to which the Mineral Reserve estimates could be materially affected by mining, metallurgical, infrastructure, permitting, and other relevant factors that are different than the factors used in the PFS and described in this report is shown by the sensitivity analysis provided in Item 22.6. Because RVM is a producing mine, infrastructure and permitting factors are not anticipated to materially affect the Mineral Reserve estimate. Infrastructure construction is either planned or in progress for H1SMC/NDR and permitting is well under way. Infrastructure and permitting factors are also not expected to materially affect the Mineral Reserve Estimate.

Except for CPP GMAs, which are dependent primarily upon fertilizer prices and chemical plant costs, all other relevant mining and metallurgical factors related to RVM, H1SMC, and NDR and described in this report are factors affecting the estimated operating costs summarized in Item 21.0 of this report. If for any reason any of these operating cost factors are changed such that operating cost estimates change materially, then the Mineral Reserve estimates stated in this report could be materially affected. However, as an example, if the cost factors are changed such that total operating and capital cost estimates are increased by 20%, the average imputed transfer price over the project life increases from $287 per ton to $337 per ton of P_2O_5 delivered FOB railcar at the tipple, or about 17%. This imputed price remains below the average GMA of $345 per ton for H1SMC and $358 per ton for NDR as described in Item 22.0 and therefore the Mineral Reserve estimates may remain unaffected. As of the effective date, there are no known cost factors that are materially different from the factors used in the PFS and summarized in this report to the extent that the Mineral Reserve estimates would be materially affected.

Revenues projected in the TR economic analysis summarized in Item 22.0 depend upon forecast MAP and SPA prices that are used to calculate the GMAs described in this report. If the forecast prices of the CPP phosphate products over the study period decline by 10% or more, then the Mineral Reserve estimates will be materially and adversely affected. In this case, the average GMA would be reduced to about $241 and $253 per ton of P_2O_5 delivered FOB railcar at tipple for H1SMC and NDR, respectively. The extent to which the Mineral Reserve estimates could be affected is estimated to be about a 10% to 16% reduction based upon the pit shell analysis described in this Report.

16.0 MINING METHODS

This Item contains forward-looking information related to mining methods, mine design, equipment selection and production plans for the Conda projects. The factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: Mineral resource model, geotechnical, hydrogeological and other surface and underground characteristics described and design criteria; labor and equipment availability and productivity.

This Item describes the current or proposed mining methods and provide a summary of the relevant information used to establish the amenability or potential amenability of the mineral resources or mineral reserves to the proposed mining methods. The mining methods applied took into consideration the following:

(a) Geotechnical, hydrological, and other parameters relevant to mine or pit designs and plans;
(b) Production rates, expected mine life, mining unit dimensions, and mining dilution factors used;
(c) Requirements for stripping, underground development, and backfilling; and
(d) Required mining fleet and machinery.

WSP was retained by Itafos to develop mine plans for RVM, H1SMC, and NDR pit based on the resources discussed in Item 14.0. The following sub-items summarize the assessment of the Open Pit Project.

The phosphate ore at the Conda operations is recovered using conventional open-pit truck and shovel mining methods due to the proximity of the ore to the surface and the physical characteristics of the deposit and surrounding terrain. Four hydraulic excavators were used for both ore and waste removal at RVM, NDR, and the first few years at H1SMC. These included a Hitachi 2600, Cat 6020, Cat 6015, and a Cat 395. In the latter half 2028, an additional CAT 6020 was added to the loading fleet due to the increasing strip ratio and the inability of the current loading fleet to uncover the required annual ore tonnage. Overburden would be loaded into rigid frame 100-ton haul trucks and the overburden is then hauled to either a designated ex-pit overburden storage area or backfilled into a previously mined out area. Ore would be loaded into rigid frame 100-ton haul trucks, which then haul the ore material up the active mining face and ex-pit to the tipple. The ore material is delivered to the tipple stockpile and is rehandled by front-end loaders and trucks into the tipple hopper for loading into rail cars. The loaded train then transports the ore to the CPP for crushing, sizing, and beneficiation.

16.1 Geotechnical

16.1.1 RVM

The pit slope parameters used in the preparation of the open pit mine for RVM are based on the Call & Nicholas, Inc. (CNI) report “Updated Feasibility Slope Angles for the Planned Rasmussen Valley Open Pit Phosphate Mine.” The report was reviewed and considered adequate for the purposes of designing pits for inclusion in a PFS level study. A summary of the geotechnical design parameters for RVM is provided below in Table.16.1. For a more in-depth discussion of the RVM pit geotechnical designs please refer to the previous Conda TR, 2019.

Table.16.1: RVM Geotechnical Parameters

Rock Type	Bedding Dip	IRA	Bench Height	BFA	Bench Width
	(°)	(°)	ft.	(°)	ft.
Unconsolidated	n/a	n/a	80	34	n/a
Chert	n/a	49	80	59	20
Phosphate Zone	n/a	49	80	59	20
Limestone	0-35	0-35	n/a	0-35	0
	35-45	35	80	35-45	30
	45-55	40	80	45-55	30
	55-59	43	80	55-59	30
	>59	45	80	59	30

16.1.2 H1SMC and NDR

The pit slope parameters used in the preparation of the open pit mine for both the H1SMC and NDR are based on Call & Nicholas, Inc. (CNI) report "Geotechnical Prefeasibility Study for the Proposed Husky and North Dry Ridge Open Pit Phosphate Mines." The report was reviewed and considered adequate for the purposes of designing pits for inclusion in a PFS level study.

A summary of the geotechnical design parameters for H1SMC and NDR are provided below in Table 16.2, and Table 16.3, respectively. The slope design sectors for H1SMC and NDR are presented in Figure 16.1 and Figure 16.2, respectively.

Table 16.2: H1SMC Geotechnical Parameters

Sector	Location	Bedding Dip	IRA	Bench Height	BFA	Bench Width
		(°)	(°)	ft.	(°)	ft.
Footwall Slopes						
H1A-B	South, East Pit	80	45	80	58	30
H2	South Pit	0-30	Dip Slope			
H3A	East Pit	0	40	80	51	30
H3B		0-60	Dip Slope			
H4	Long Pit	50-80	45	80	58	30
H5	Long, Little Pits	30-60	45	80	58	30
H6A-B	North Pit	22-35	Dip Slope			
Dinwoody, Cherty Shale and Rex Chert Hanging Wall Slopes						
H7-H10	--	0	41	80	48	20
Meade Peak Hanging Wall Slopes						
H7	North Pit	30-55	45	80	53	20
H8	Long, Little Pits	40-80	45	80	53	20
H9	East Pit	0-70	45	80	53	20
H10	South Pit	0-60	45	80	53	20

Note: IRA = Inter-ramp angle, Angle, BFA = Bench Face Angle, CBW = Catch Bench Width
Location: See Figure 16.1 for delineation of areas listed here

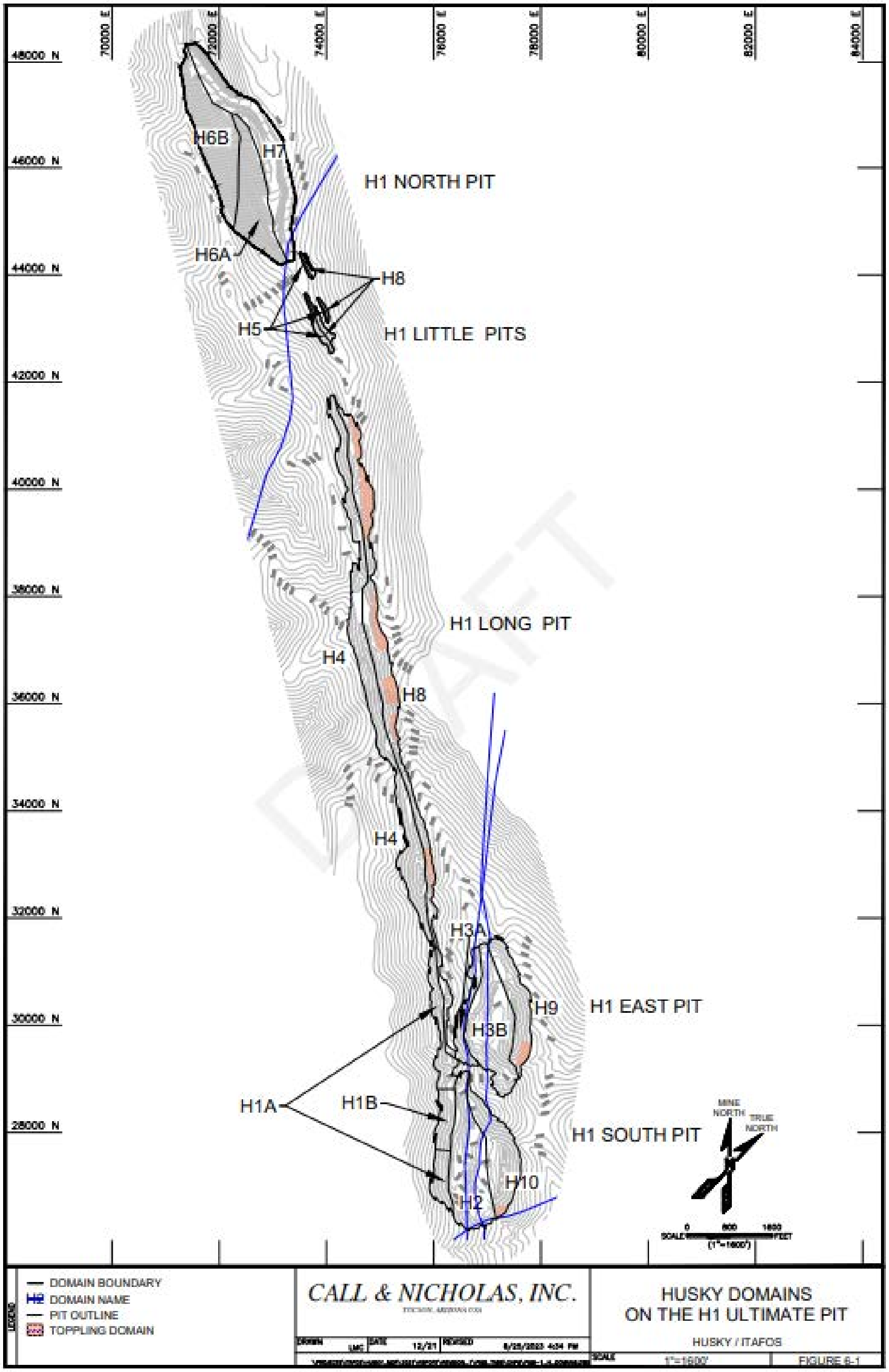


Figure 16.1: H1SMC Slope Design Sectors

Table 16.3: NDR Geotechnical Parameters

Sector	Bedding Dip	IRA (deg)	Bench Height	BFA	CBW
		deg	ft.	deg.	ft.
Footwall Slopes					
NDR1A	30°-50°	45	80	58	30
NDR1B	20°-30°	Dip Slope			
NDR2	60°-80°	45	80	58	30
NDR3	30°-80°	45	80	58	30
Dinwoody, Cherty Shale and Rex Chert Hanging Wall Slopes					
NDR4-NDR6	---	41	80	48	20
Meade Peak Hanging Wall Slopes					
NDR4	30°-80°	45	80	53	20
NDR5	60°-80°	45	80	53	20
NDR6	60°-80°	45	80	53	20

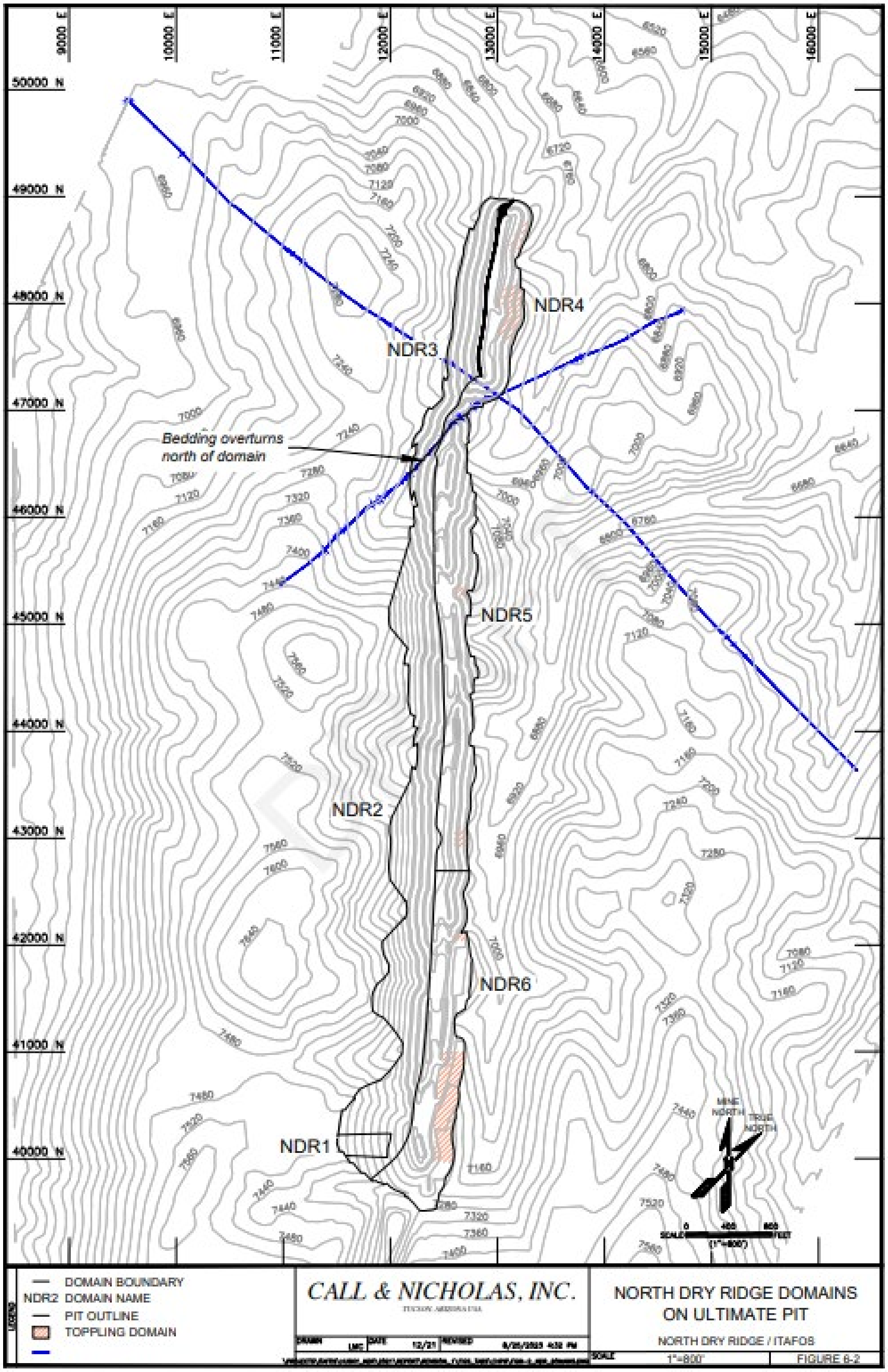


Figure 16.2: NDR Slope Design Sectors

16.2 Pit Design

The H1SMC and NDR geotechnical parameters used the 2019 pit shells along with the various modeled ore beds to prepare the 2023 H1SMC and NDR ultimate pit and phase designs. The selected access parameters used in the mine design are suitable for the equipment currently mining the adjacent pits. The pit shells along with the various modeled ore beds were used as guides to prepare the H1SMC, and NDR ultimate pit designs and phase designs. Pit designs allow sufficient room within permit boundaries to accommodate storm water collection, perimeter ditching, and containment ponds to eliminate discharge of meteoric water from the mining operations boundary.

16.2.1 RVM Mine Design

The RVM ultimate design and phase designs were completed using the geotechnical parameters from Table.16.1, the selected pit shell from Figure 15.1, and the ramp design parameters from Item 16.3. The ultimate RVM pit design is shown in Figure 16.3. The production schedule was based on the ultimate design provided by Conda and the block model created by WSP for the previous Conda TR, 2019. The mined-out surface (as of end of June 2023) and the existing Conda ultimate pit design were used to create a remaining ultimate pit design.

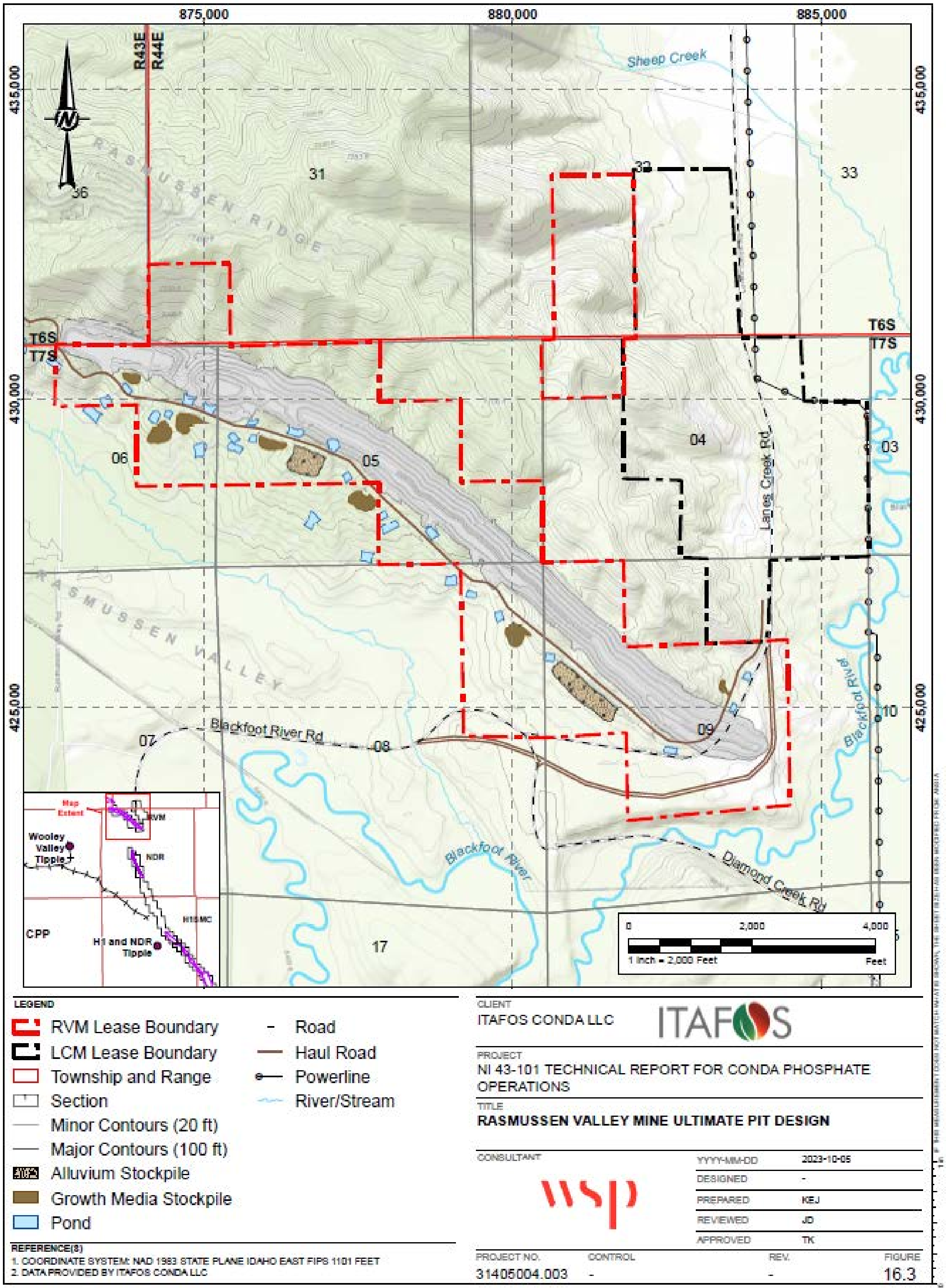


Figure 16.3: RVM Ultimate Pit Design

16.2.2 H1SMC Pit Design

The H1SMC pit design and phase designs were completed using the geotechnical parameters from Table 16.2, the selected pit shell from Figure 15.3, and the ramp parameters from Item 16.3. The ultimate H1SMC pit design is shown in Figure 16.4. A total of 9 individual phase designs were prepared to facilitate the H1SMC mine plan schedule as discussed in Item 16.5.

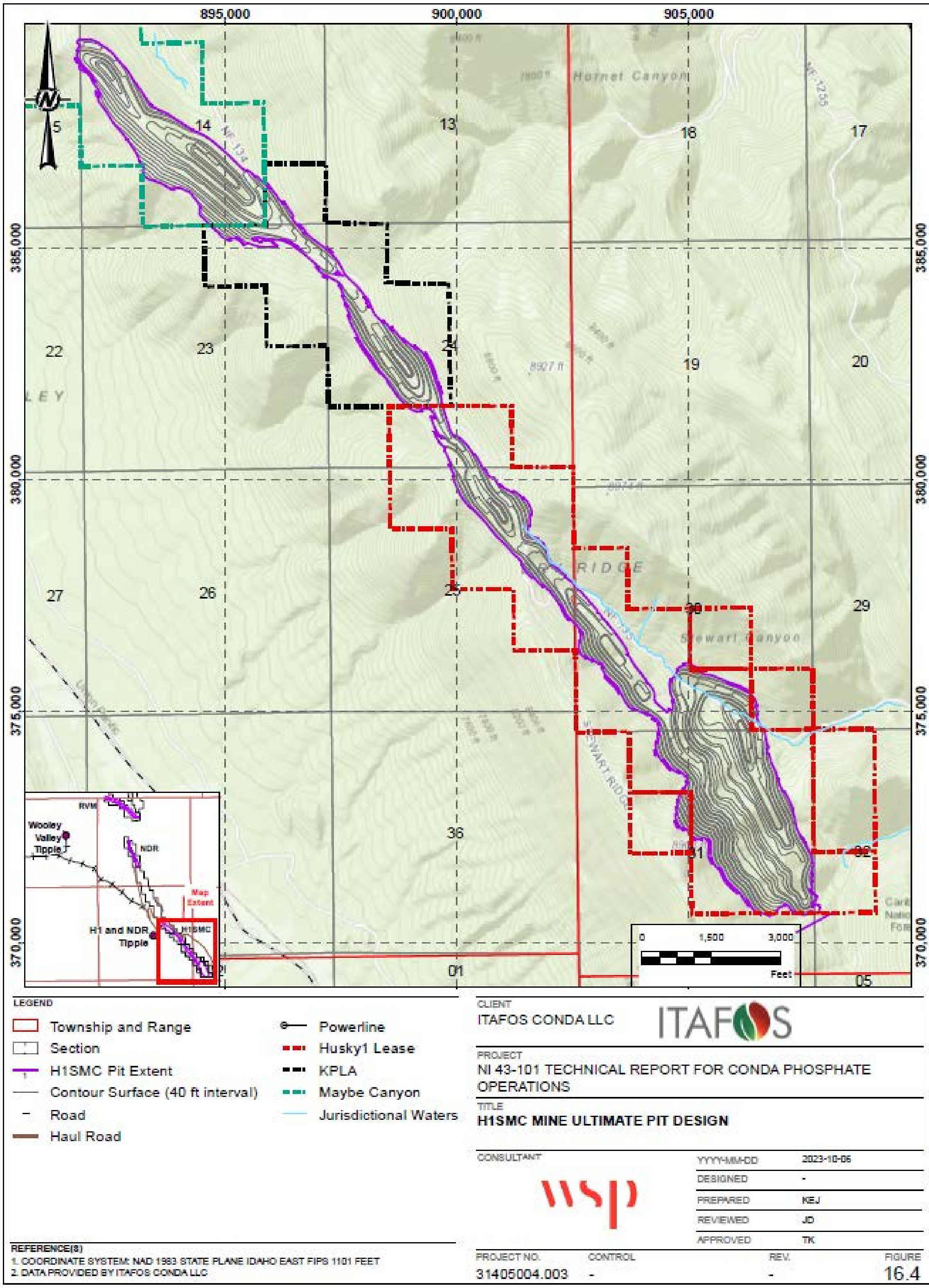


Figure 16.4: H1SMC Ultimate Pit Design

16.2.3 NDR Pit Design

The NDR pit design and phase designs were completed using the geotechnical parameters from Table 16.3, the selected pit shell from Figure 15.2, and the ramp parameters from Item 16.3. The ultimate NDR pit design is shown in Figure 16.5.

A total of 4 individual phase designs were prepared to facilitate the NDR mine plan schedule as discussed in Item 16.5.

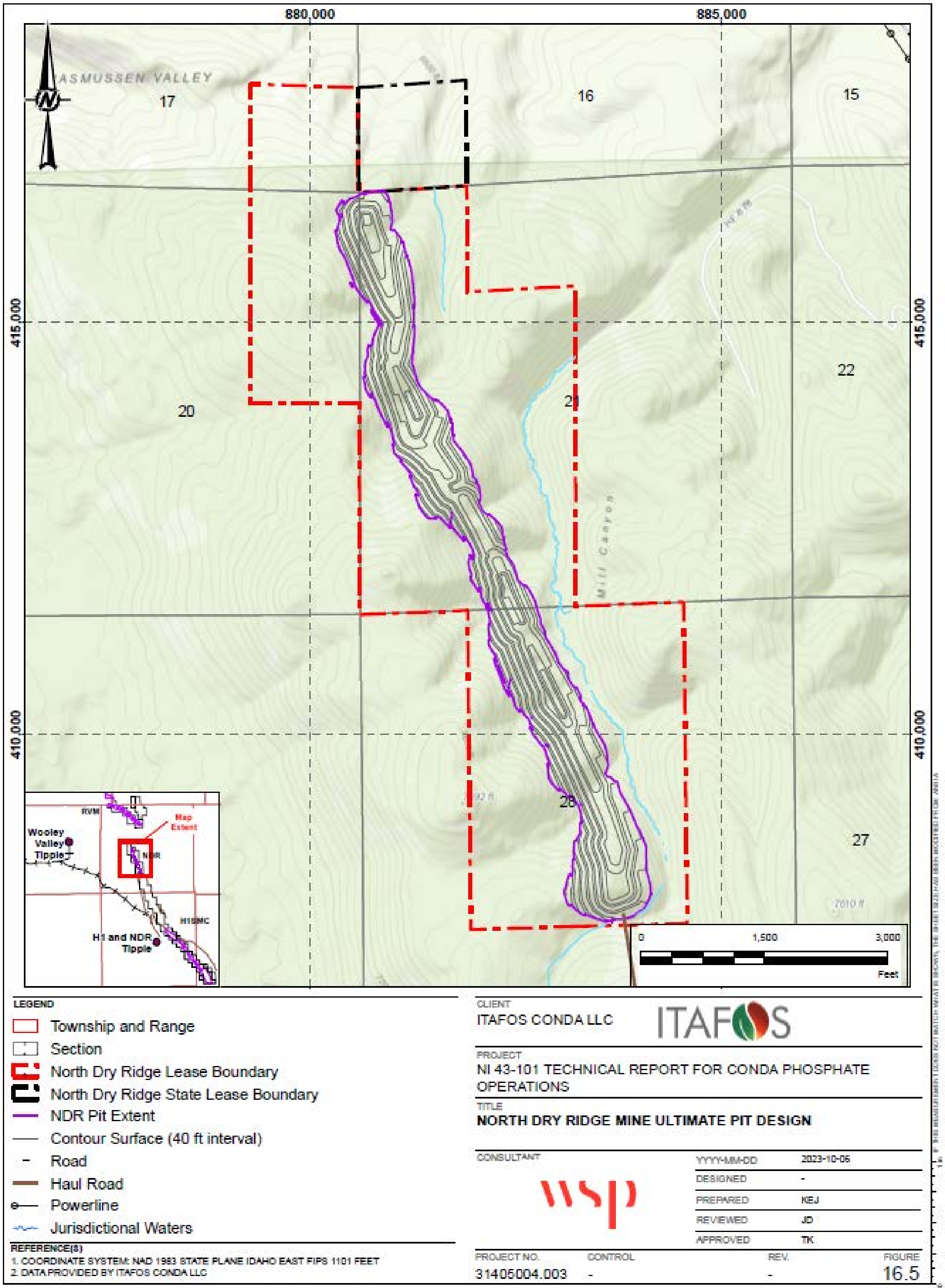


Figure 16.5: NDR Ultimate Pit Design

16.3 Haul Road Design Parameters

The majority of the haul roads were designed to be double-lane; however, single-lane roads were used as necessary to access the bottom-most benches in the phase designs. As seen in Figure 16.6, the double-lane sections of the haul ramp were designed to accommodate three times the width of a 100-ton class haul truck with additional clearance for a berm and ditch. Single-lane sections were designed to accommodate two times the width of the haul truck as shown in Figure 16.7. A 5-ft high berm is required on the outside of the ramps for safe operation. A 1-foot-wide ditch was also included on the inside of the haul ramp to allow for drainage of surface water. The total width of the double-lane ramp was calculated to be 80 feet, and the total width of the single-lane ramp was calculated to be 58 feet. Single lane ramps near the pit bottom were designed at a maximum ramp grade of 12%. In all other areas, the maximum ramp grade was designed at 10%.

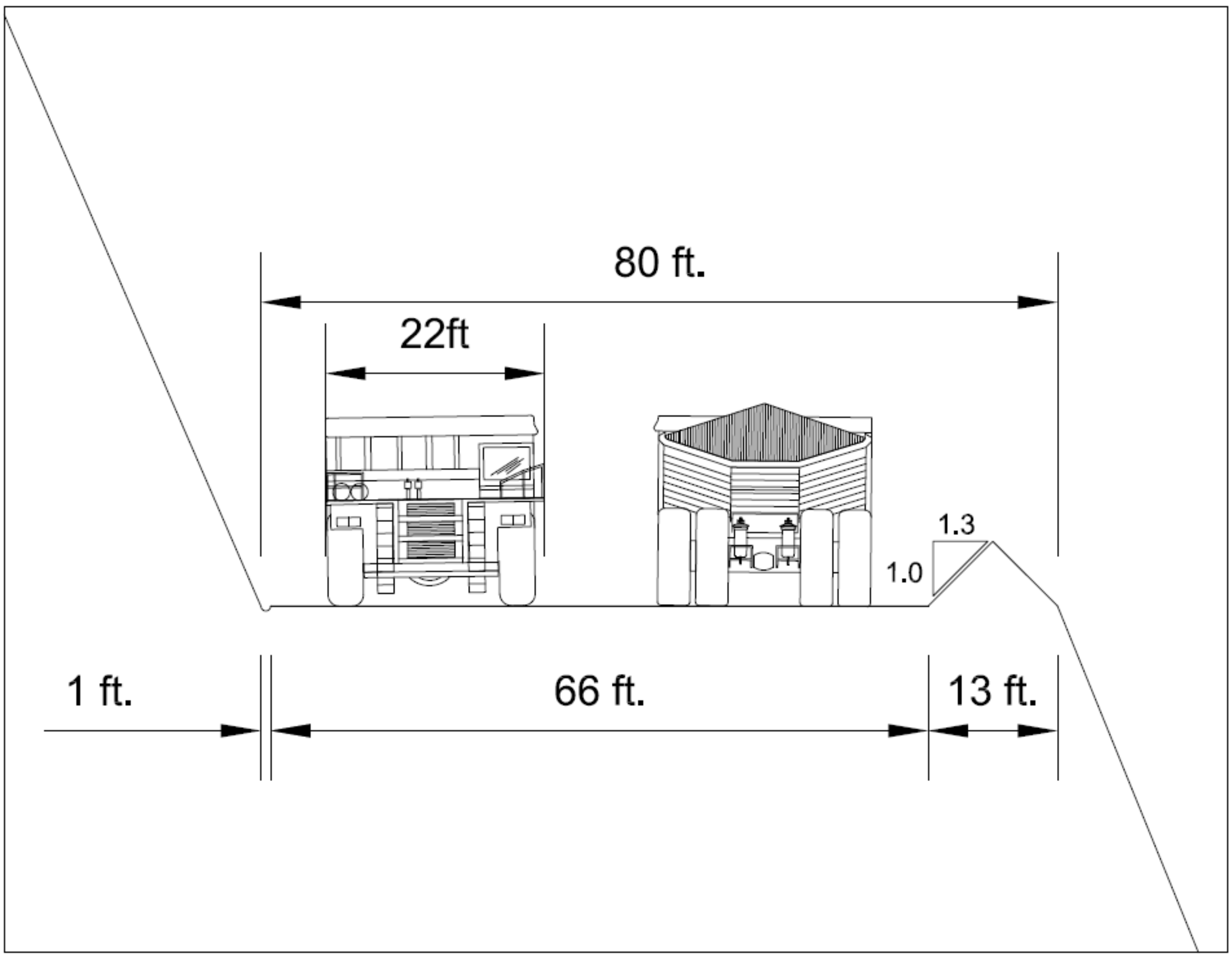


Figure 16.6: Double-Lane Design for 100-ton Class Haul Truck

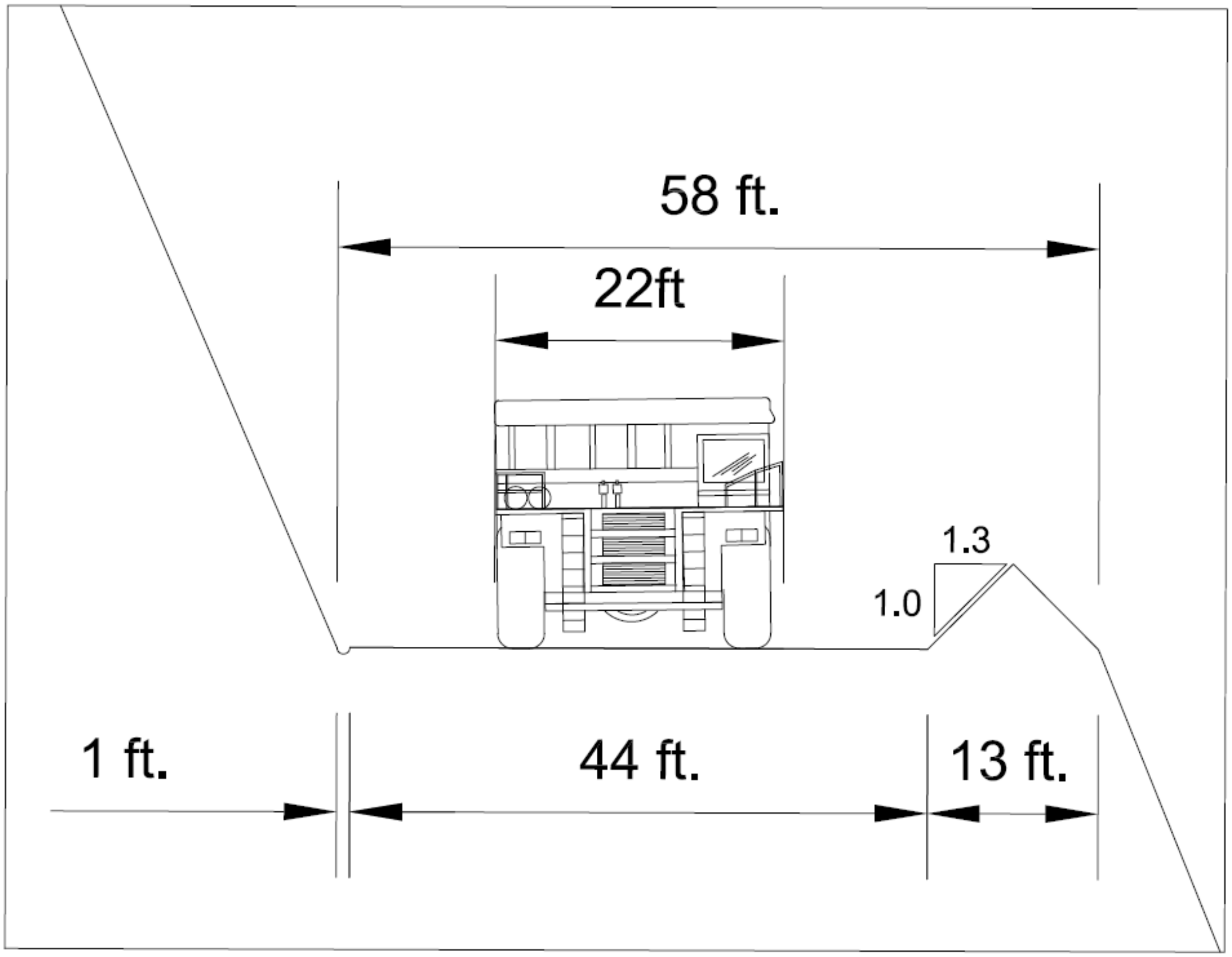


Figure 16.7: Single-Lane Design for 100-ton Class Haul Truck

16.4 Overburden Storage Area Design

Overburden Storage Areas (OSA) were identified by Conda and considered by WSP in the mine scheduling process. Portions of North Maybe Mine and South Maybe Canyon Mine are planned to be infilled with overburden from NDR and H1SMC, respectively.

A temporary OSA was planned for H1SMC at the southern end of the pit on the eastern side to accommodate the increased total depth required at the south end of the ultimate pit. This temporary OSA was designed with a bench face angle of 38°, bench width of 10 feet and bench height of 50 feet.

In-pit overburden backfill was designed using the following basic criteria:

- Backfill should cover all highwalls.
- Backfill grading should shed water off the backfilled pit areas.
- Maximum final backfill grading should be 3H:1V.

- Minimum final backfill grading should be 2%.
- Areas of un-reclaimed pit wall portions of the pits should be minimized.
- Backfill grading is intended to blend with the surrounding topography and re-establish drainage patterns across backfill.

To accommodate all waste storage requirements required to maintain the ore production schedule, some backfill areas are overstacked with waste above the original topography. In these areas, the overstacked waste will be rehandled back into the final pit area once mining is completed, to restore and blend into the natural topography.

16.5 Production Schedule

WSP developed a production schedule in conjunction with Conda mine engineers to mine the remaining RVM reserves, recover NDR reserves and followed up with the H1SMC Reserves.

For H1SMC and NDR, the production schedule was developed using the phosphate tons necessary for the annual fertilizer production targets. Based on the metallurgical recovery from the fertilizer production process (99.50%), approximately 387 ktons of P_2O_5 are needed in the Filtered Phosphoric Acid (FPA) feed into the Fertilizer production stream. Based on the parameters in Table 16.4, approximately 429 ktons of P_2O_5 are needed to yield the 387 ktons of P_2O_5 in the FPA.

The metallurgical recovery from the beneficiation plant is expected to be different for NDR (79.69%) and H1SMC (78.60%), requiring different P_2O_5 tons in the beneficiation plant feed (538,000 tpy from NDR, and 545,000 tpy from H1SMC). With a mining recovery of 97% (In-situ to ROM) this yields an annual production requirement of 555,000 tons of P_2O_5 from NDR and 562,000 tons of P_2O_5 from H1SMC.The annual in-situ P_2O_5 requirements were used as the minimum production targets for the mining schedule.

Table 16.4: Production Schedule Targets

Target	Annual Product Quantity	P_2O_5 Recovery	P_2O_5 Concentration in Product	P_2O_5 needed
	ktons (dry)	%	%	ktons (dry)
Fertilizer Plant				
Product: MAP	327	99.50%	53.3%	175
Product: NPS	62	99.50%	41.0%	26
Product: SPA1		99.50%		186
Total P_2O_5 Tons needed from FPA	389			**387**
Chemical Plant				
P_2O_5 tons Required In Chemical Plant Feed		90.23%		**429**
Beneficiation Plant				
P_2O_5 Tons needed in Beneficiation Plant Feed: NDR Ore		79.69%		**538**
P_2O_5 Tons needed in Beneficiation Plant Feed: H1 Ore		78.60%		**545**
Mining Feed				
P_2O_5 Tons needed In Situ: NDR Ore		97%		**555**
P_2O_5 Tons needed In Situ: H1 Ore		97%		**562**

The mine production schedule was created using Deswik Sched. Deswik Sched uses a Gantt chart-based scheduling approach to generate a schedule based on user-defined constraints and objectives, either rate based or duration-based scheduling. The annual mining progression for RVM is shown in Figure 16.9 to Figure 16.11. The annual mining progression for NDR is shown in Figure 16.12 to Figure 16.17. The annual mining progression for H1SMC is shown in Figure 16.18 to Figure 16.28. All figures are at the end of this Item. The production schedule, which meets the wash plant feed targets and balanced the total material movement, is shown in Table 16.5 and Figure 16.8.

Table 16.5: Mine Production Schedule

Period	RVM				NDR				H1SMC			
	Waste (M yd³) ROM	Ore (Mt) ROM	Strip Ratio (Waste yd³/ Ore Tons)	P_2O_5 Grade %	Waste (M yd³) ROM	Ore (Mt) ROM	Strip Ratio (Waste yd³/ Ore Tons)	P_2O_5 Grade %	Waste (M yd³) ROM	Ore (Mt) ROM	Strip Ratio (Waste yd³/ Ore Tons)	P_2O_5 Grade %
2023 Q3	2.76	0.61	4.5	26.0%								
2023 Q4	2.42	0.52	4.6	26.0%								
2024 Q1	2.33	0.48	4.8	26.0%								
2024 Q2	2.08	0.65	3.2	26.0%	0.26	0.03	7.8	26.0%				
2024 Q3	2.29	0.51	4.5	26.0%	0.74	0.15	5.0	26.4%				
2024 Q4	2.28	0.55	4.1	26.0%	0.74	0.14	5.2	27.1%				
2025	4.37	1.47	3.0	26.0%	9.00	1.42	6.3	27.0%				
2026					12.69	2.19	5.8	26.6%				
2027					4.30	0.97	4.5	26.6%	7.95	0.92	8.7	26.0%
2028									13.73	2.76	5.0	24.4%
2029									14.36	2.14	6.7	25.1%
2030									13.71	2.66	5.2	24.1%
2031									14.08	2.41	5.8	24.6%
2032									18.32	2.62	7.0	24.2%
2033									17.94	2.72	6.6	23.6%
2034									17.57	3.12	5.6	23.8%
2035									17.79	2.65	6.7	24.1%
2036									12.23	2.80	4.4	24.4%
2037									4.07	1.61	2.5	24.5%

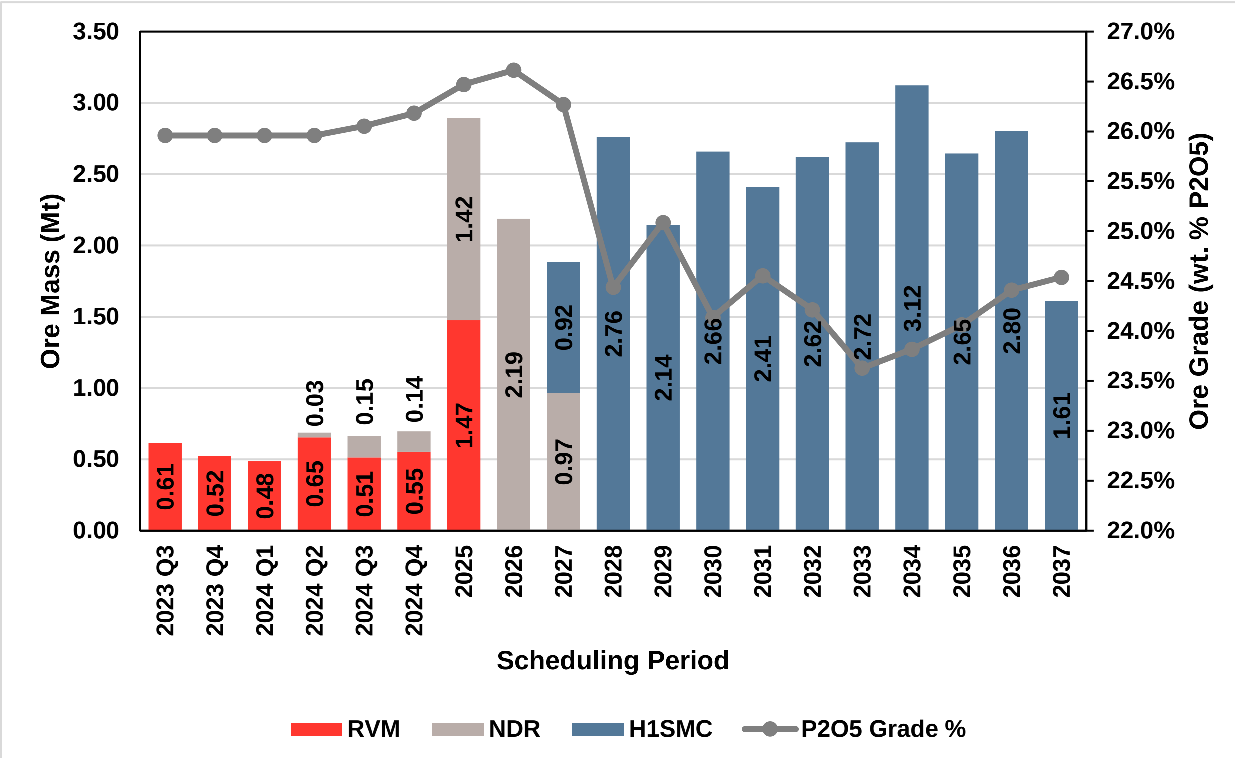


Figure 16.8: Annual Production Schedule from RVM, NDR, and H1SMC

16.6 Mining Equipment Fleet

Conda uses a combination of equipment for material extraction and transportation. The hydraulic excavators are purchased by Conda through a capital lease program while the mining contractor provides the haul trucks, dozers, and support equipment. The current truck fleet consists of about 20 - Cat 777 haul trucks, with plans to increase the fleet size as the stripping ratio increases at NDR and H1SMC. To develop the production schedule as discussed in Item 16.5, four hydraulic excavators were used for both ore and waste removal at RVM, NDR, and the first few years at H1SMC. These included a Hitachi 2600, Cat 6020, Cat 6015, and a Cat 395. In the latter half of 2028, an additional Cat 6020 was added to the loading fleet due to the increasing strip ratio and the inability of the current loading fleet to uncover the required annual ore tonnage.

16.6.1 RVM Haulage

The haulage analysis for RVM was conducted using MineSight Haulage (MSHaulage), a sub-module of MineSight. The information from MSHaulage was then loaded into MSSO to calculate the haulage requirement by period. The haulage network was designed to allow material to be hauled from its location within the pit to the designated ore stockpile or the designated dumping area. The estimation of haulage requirements was performed at a high level with the goal of providing guidance to the mining contractor regarding fleet expansion. This analysis was not used for the purpose of cost estimation, which was based on historical performance and cost.

Ore haul cycle times ranged from 80 to 95 minutes and overburden haul cycle times ranged from 15 to 24 minutes.

16.6.2 H1SMC and NDR Haulage

A haulage analysis was conducted in Deswik LHS to coincide with the NDR and H1SMC production schedules and determine the truck haulage cycle times and haulage distances over the Life-of-Mine. The truck parameters used in the analysis are as follows:

- Truck Type – CAT 777 (100 short ton)
- Operating Hours Per Truck Per Year – 6,208
- Non-Productive Loading and Dumping Time – 4 minutes (load, queue, spot, dump)
- Rolling Resistance – 3% everywhere
- Max Speed – 30 miles per hour (MPH)

The calculated haul distances and approximate haulage cycle times are summarized in Table 16.6.

Table 16.6: NDR and H1SMC Estimated Haulage Cycle Times

Pit	Year	Ore Haul Distance - One Way (Mi)	Ore Cycle Time (min)	Waste Haul Distance - One Way (Mi)	Waste Cycle Time (min)
NDR	1	6.4	55.3	1.1	14.2
NDR	2	6.6	57.3	1.5	18.9
NDR	3	7.2	63.3	2.0	21.2
NDR	4	8.3	73.2	3.4	33.7
H1	1	4.1	35.8	1.0	11.6
H1	2	5.5	49.0	4.2	44.2
H1	3	5.6	50.3	3.3	35.2
H1	4	6.2	55.8	2.6	31.4
H1	5	7.2	64.0	2.7	28.8
H1	6	8.6	77.4	3.5	35.7
H1	7	8.9	79.7	4.1	38.5
H1	8	9.5	85.3	4.6	44.4
H1	9	9.6	86.4	3.5	39.6
H1	10	9.6	87.4	3.1	35.7
H1	11	9.7	90.0	2.9	34.0

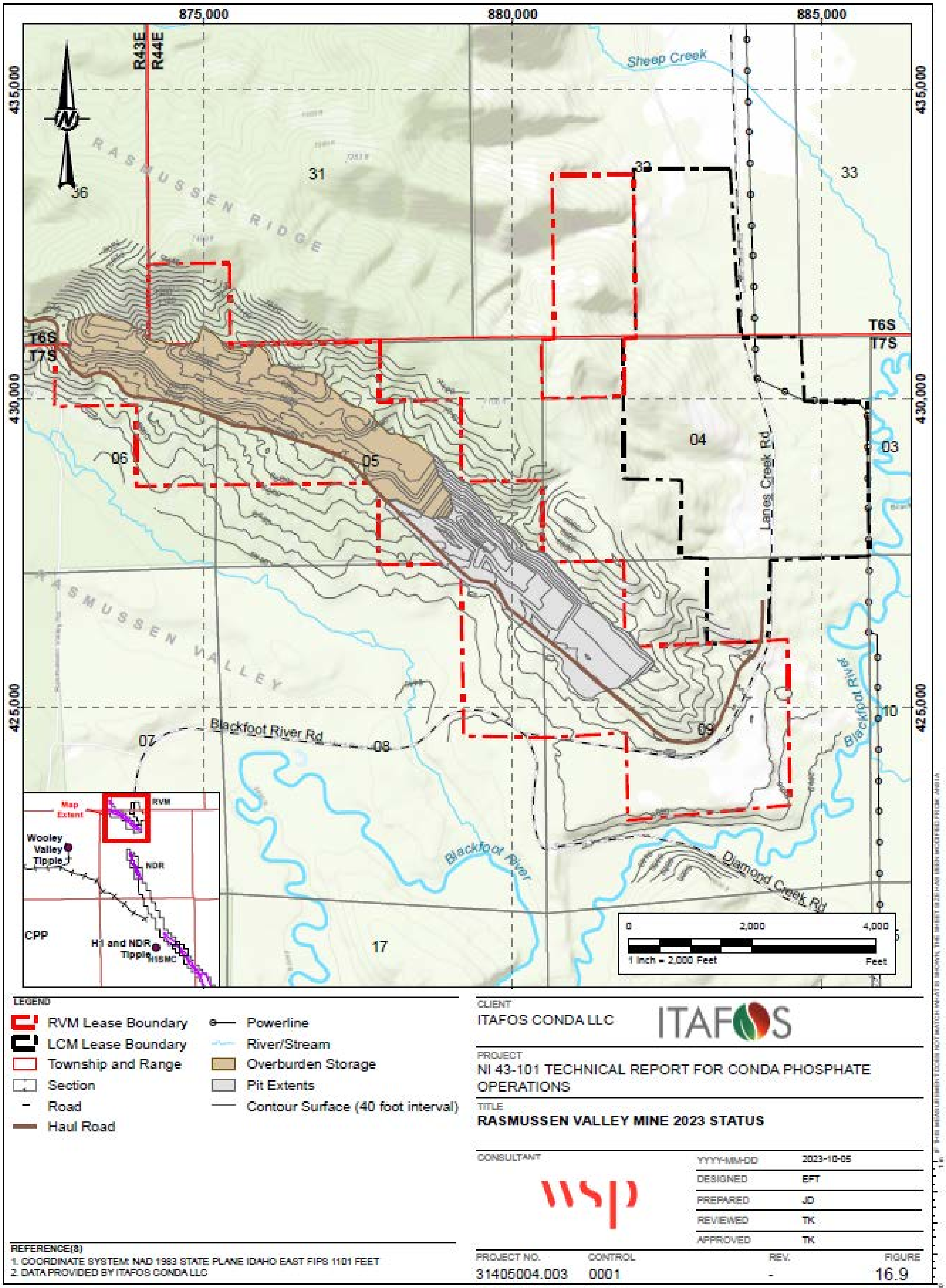


Figure 16.9: Rasmussen Valley Mine 2023 Status

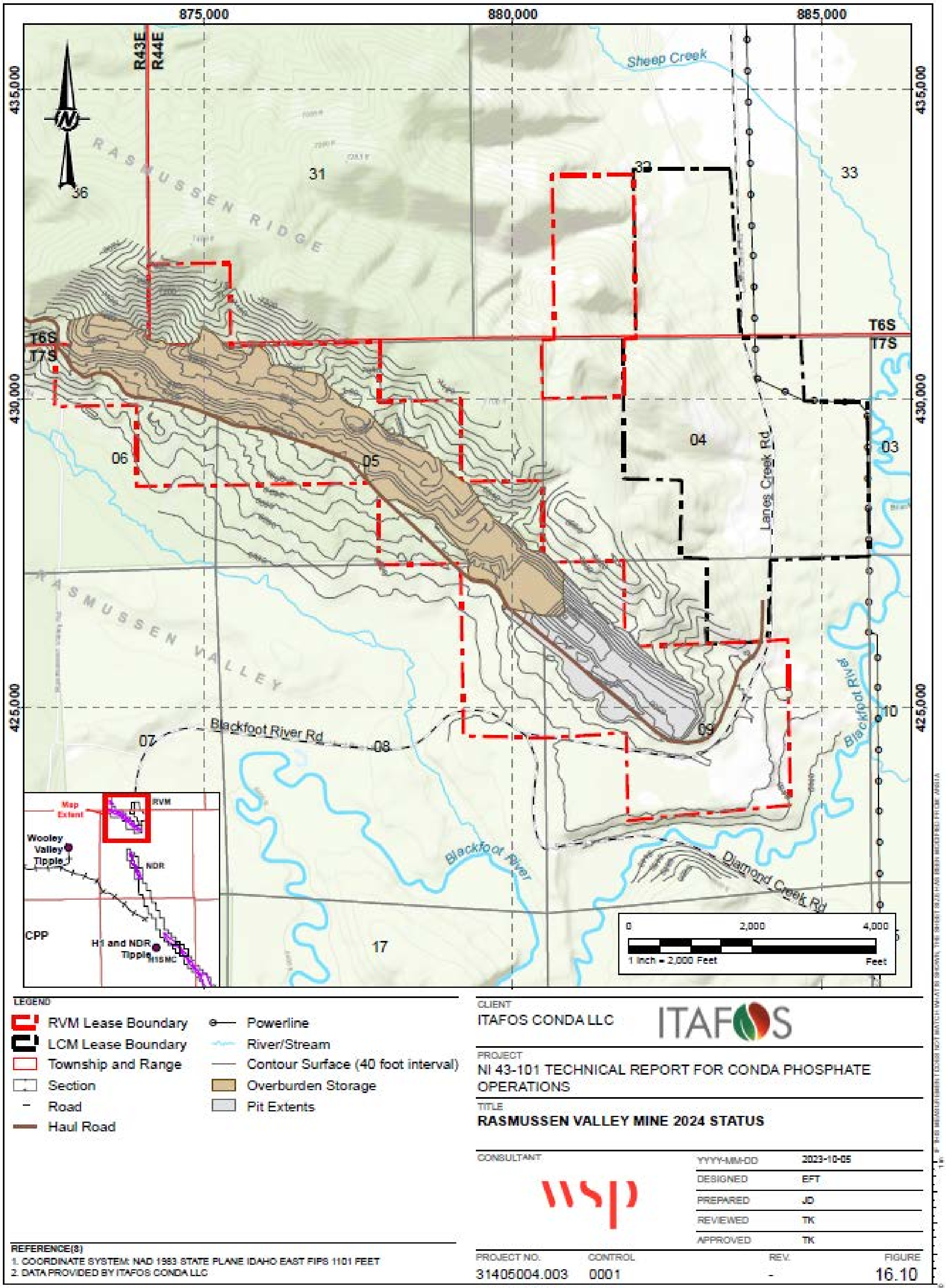


Figure 16.10: Rasmussen Valley Mine 2024 Status

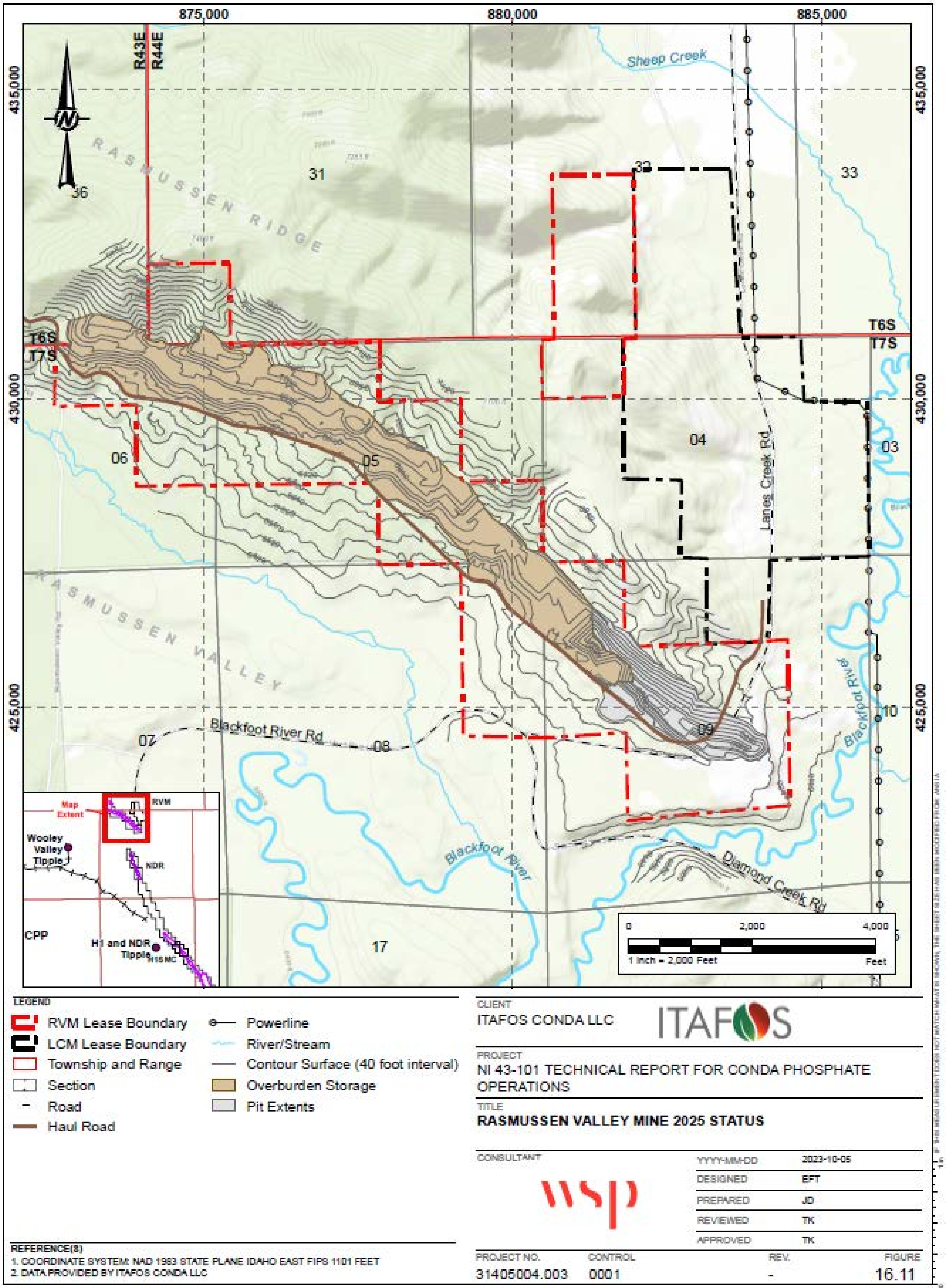


Figure 16.11: Rasmussen Valley Mine 2025 Status

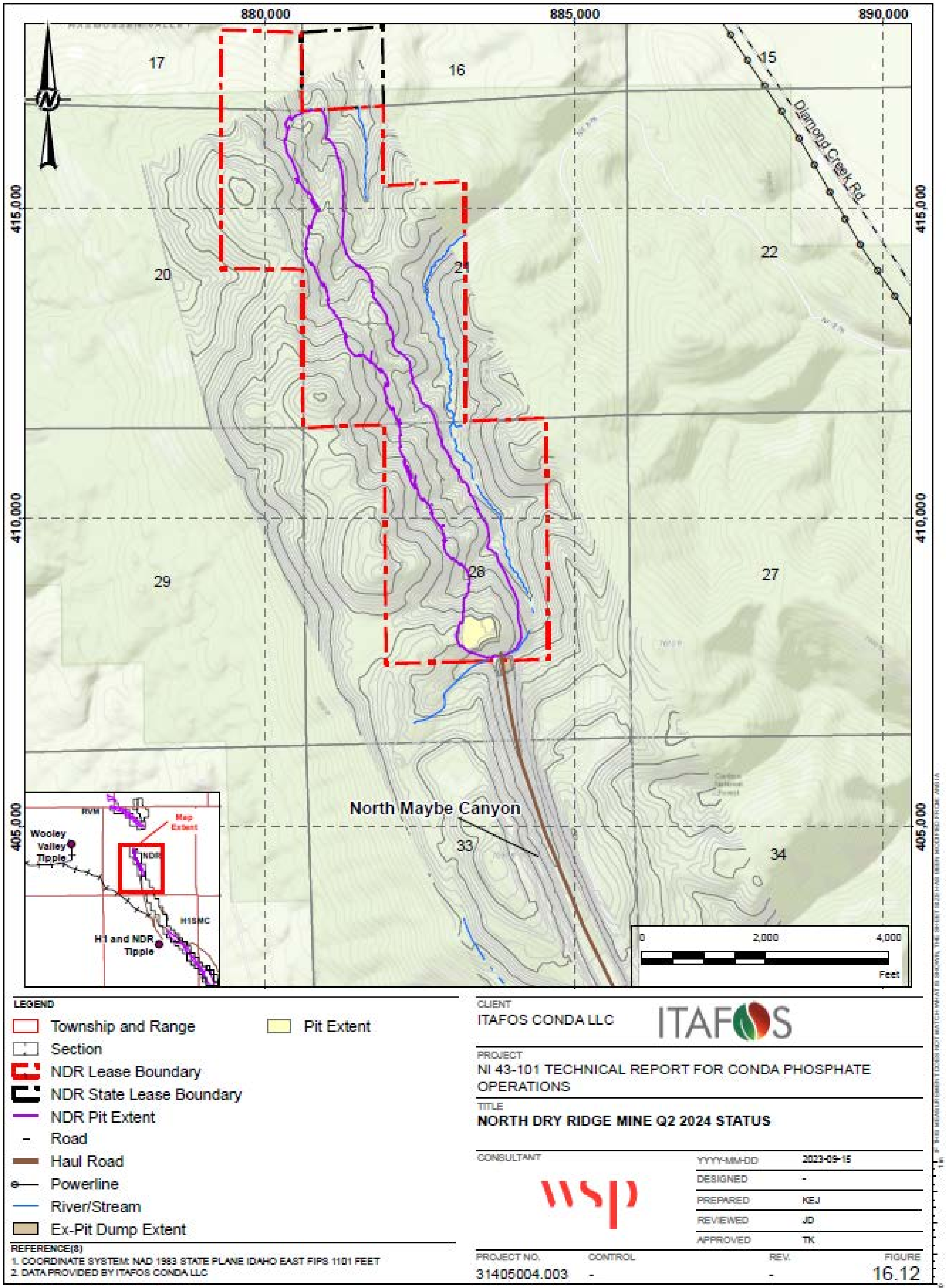


Figure 16.12: North Dry Ridge Mine Q2 2024 Status

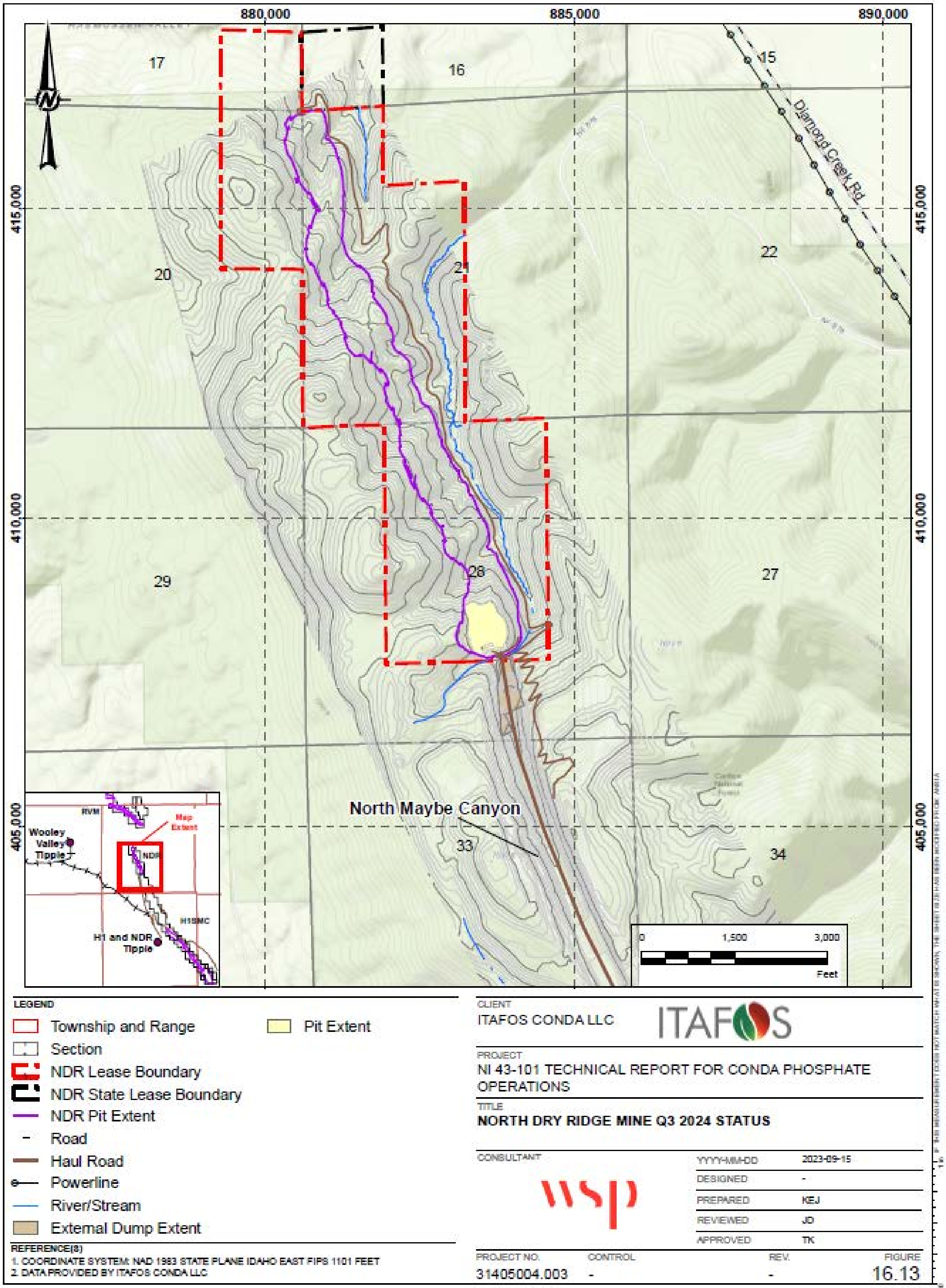


Figure 16.13: North Dry Ridge Mine Q3 2024 Status

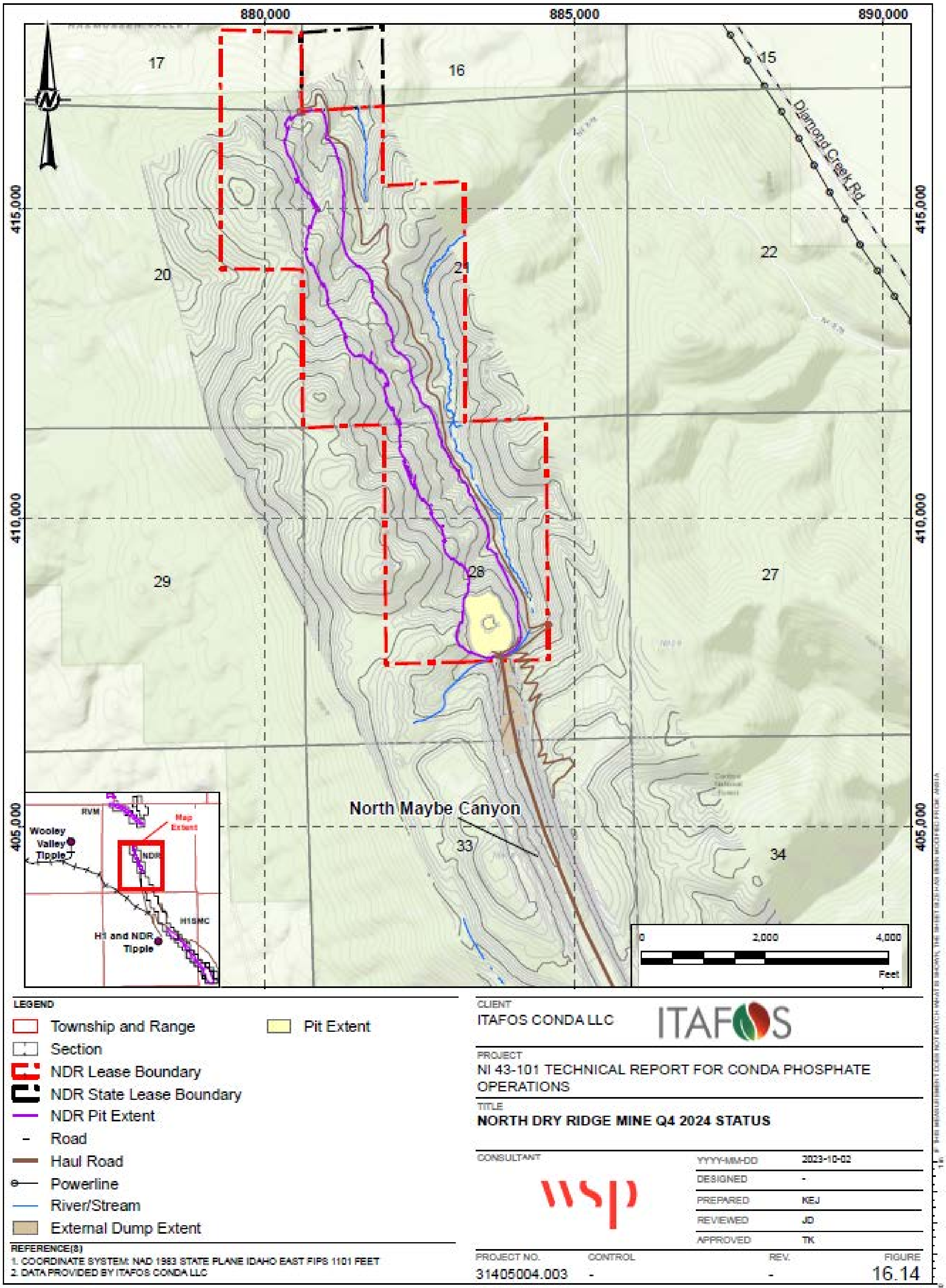


Figure 16.14: North Dry Ridge Mine Q4 2024 Status

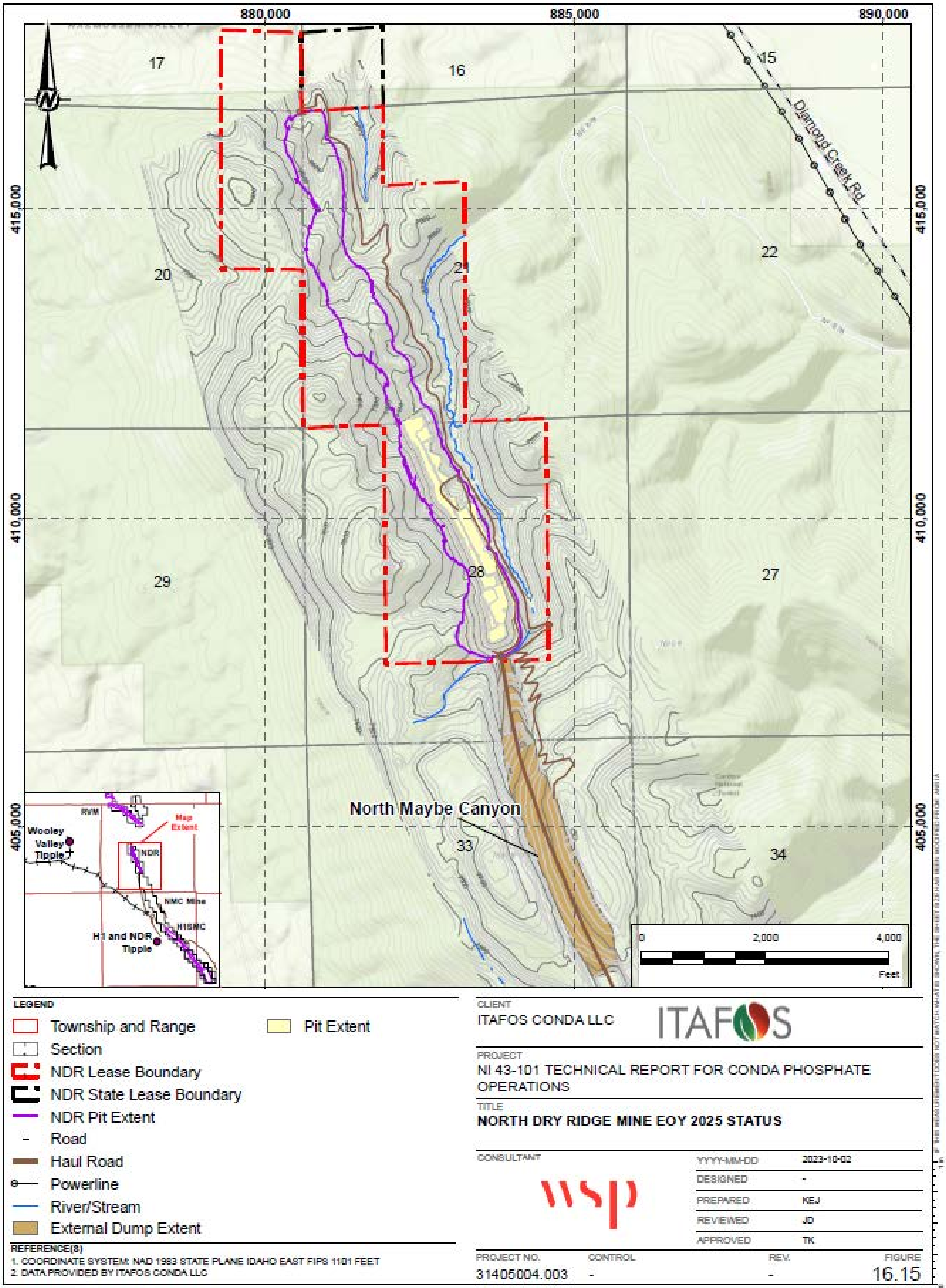


Figure 16.15: North Dry Ridge Mine EOY 2025 Status

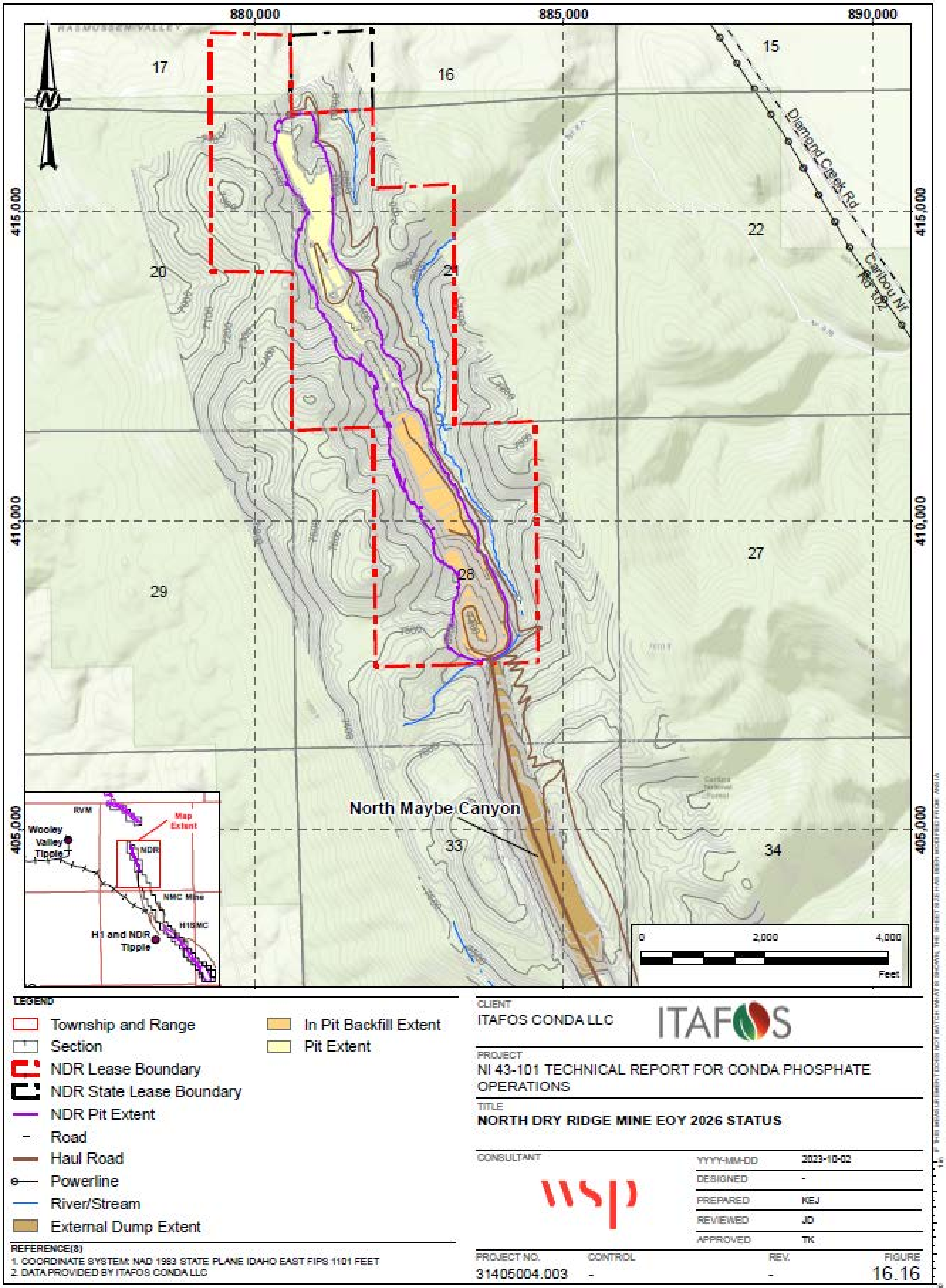


Figure 16.16: North Dry Ridge Mine EOY 2026 Status

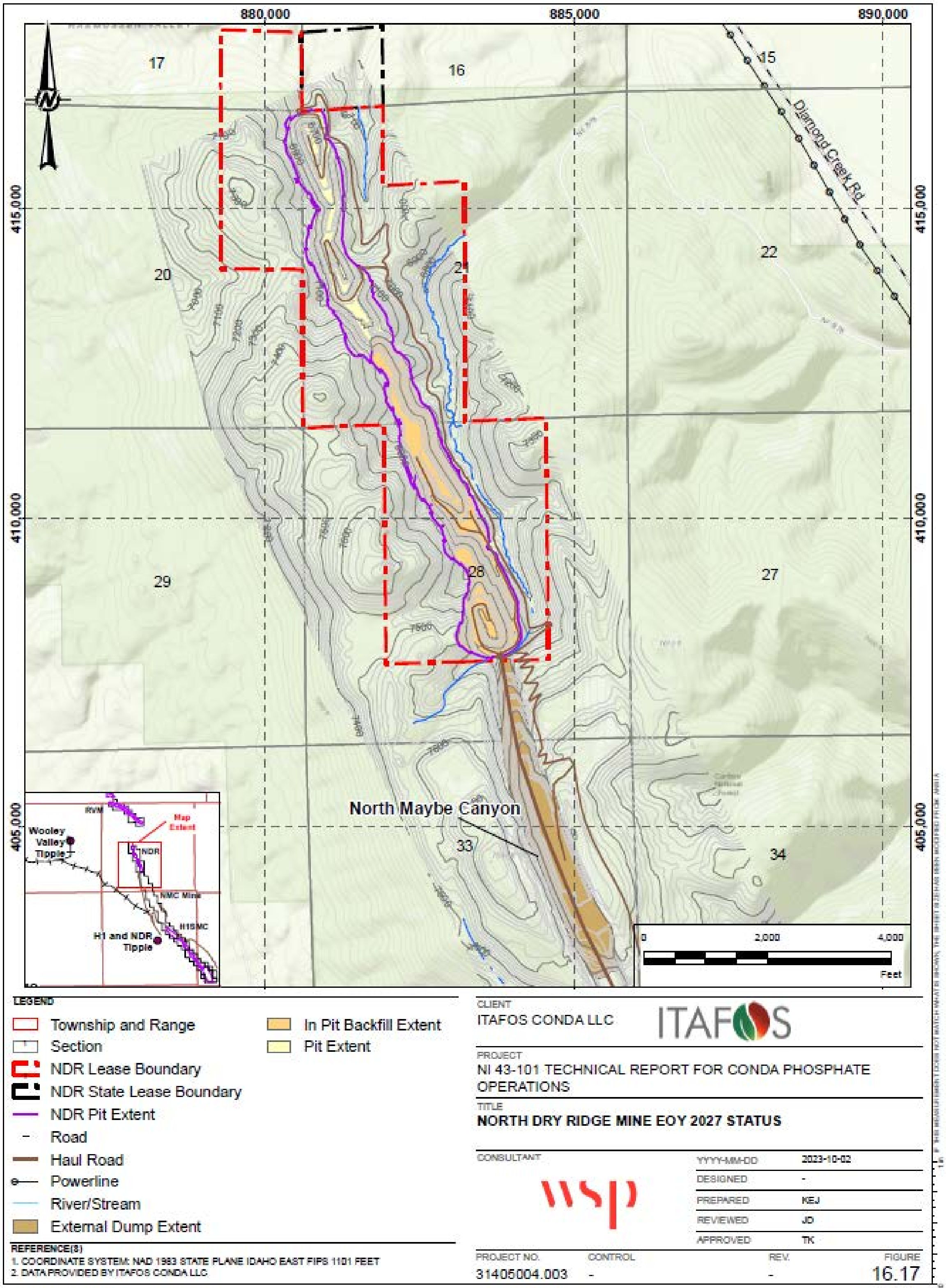


Figure 16.17: North Dry Ridge Mine EOY 2027 Status

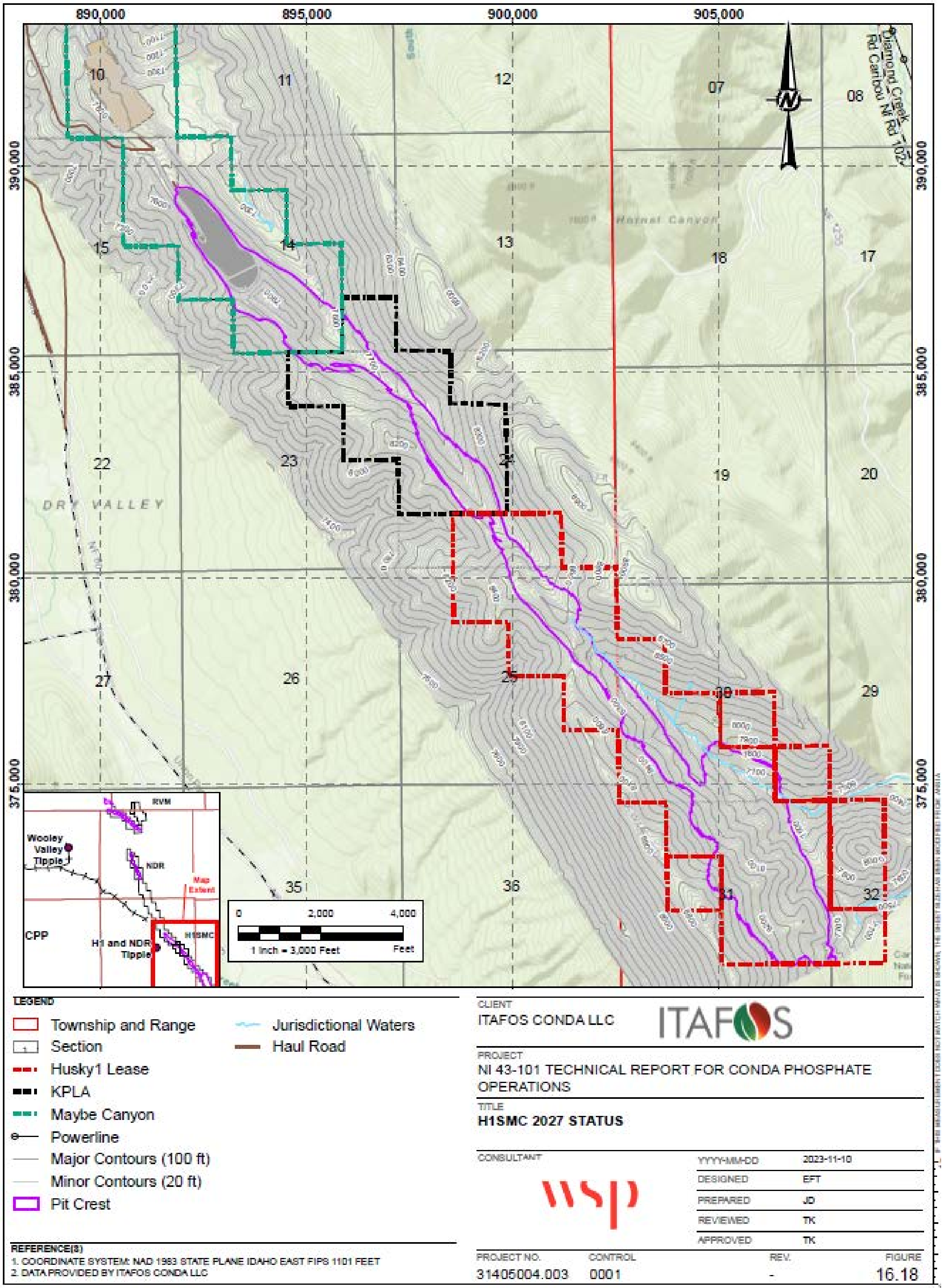


Figure 16.18: H1SMC Mine EOY 2027 Status

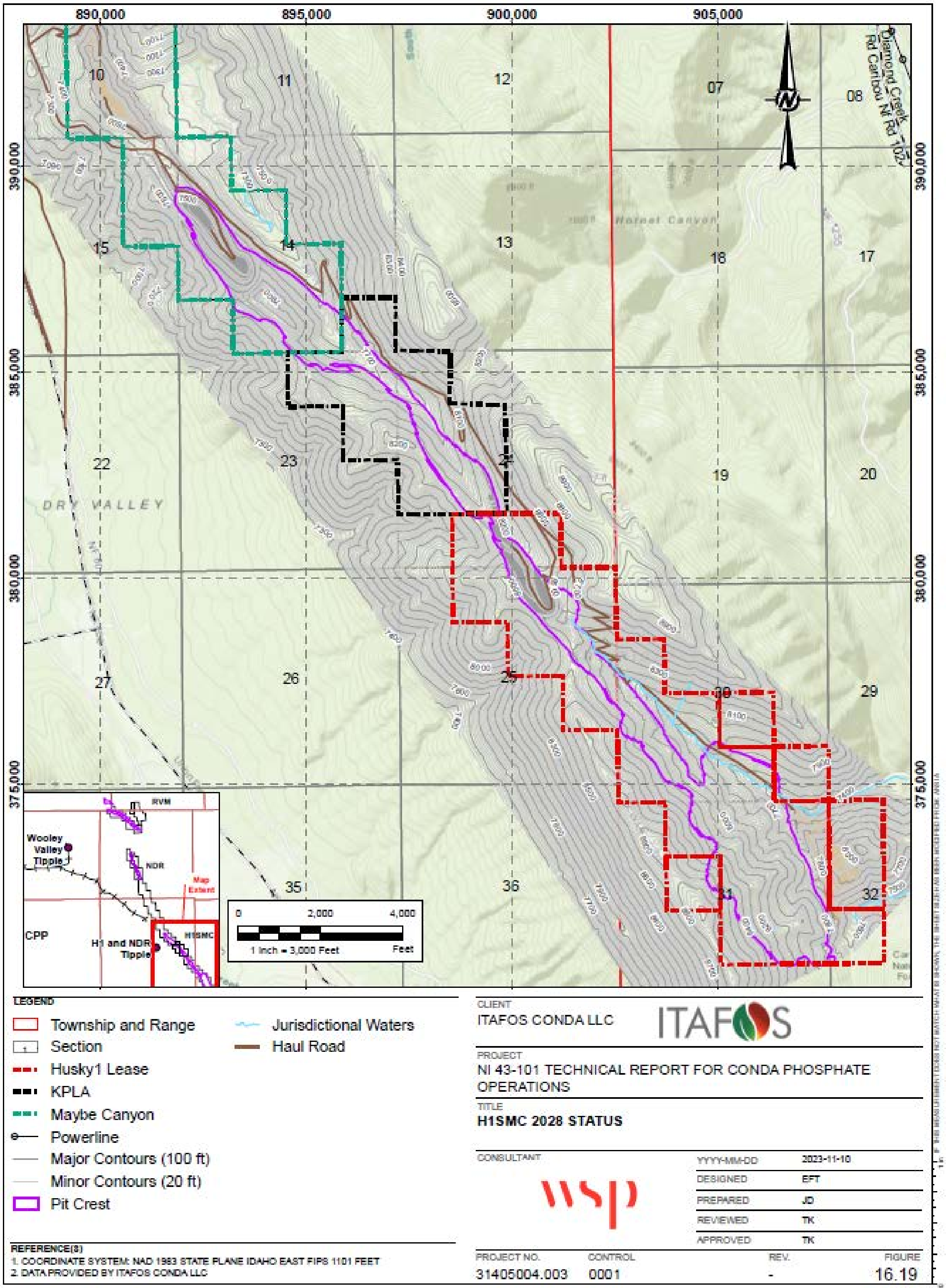


Figure 16.19: H1SMC Mine EOY 2028 Status

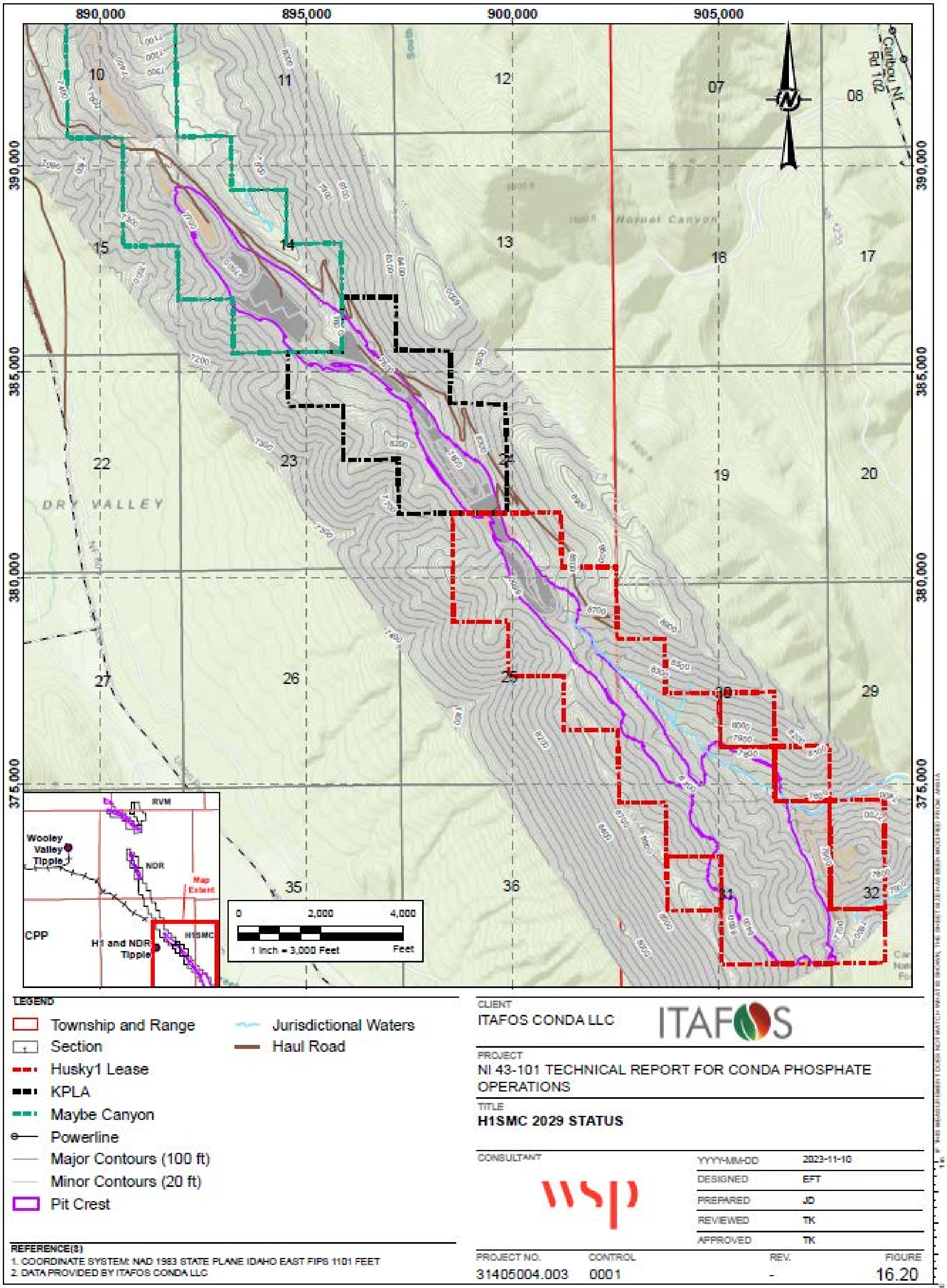


Figure 16.20: H1SMC Mine EOY 2029 Status

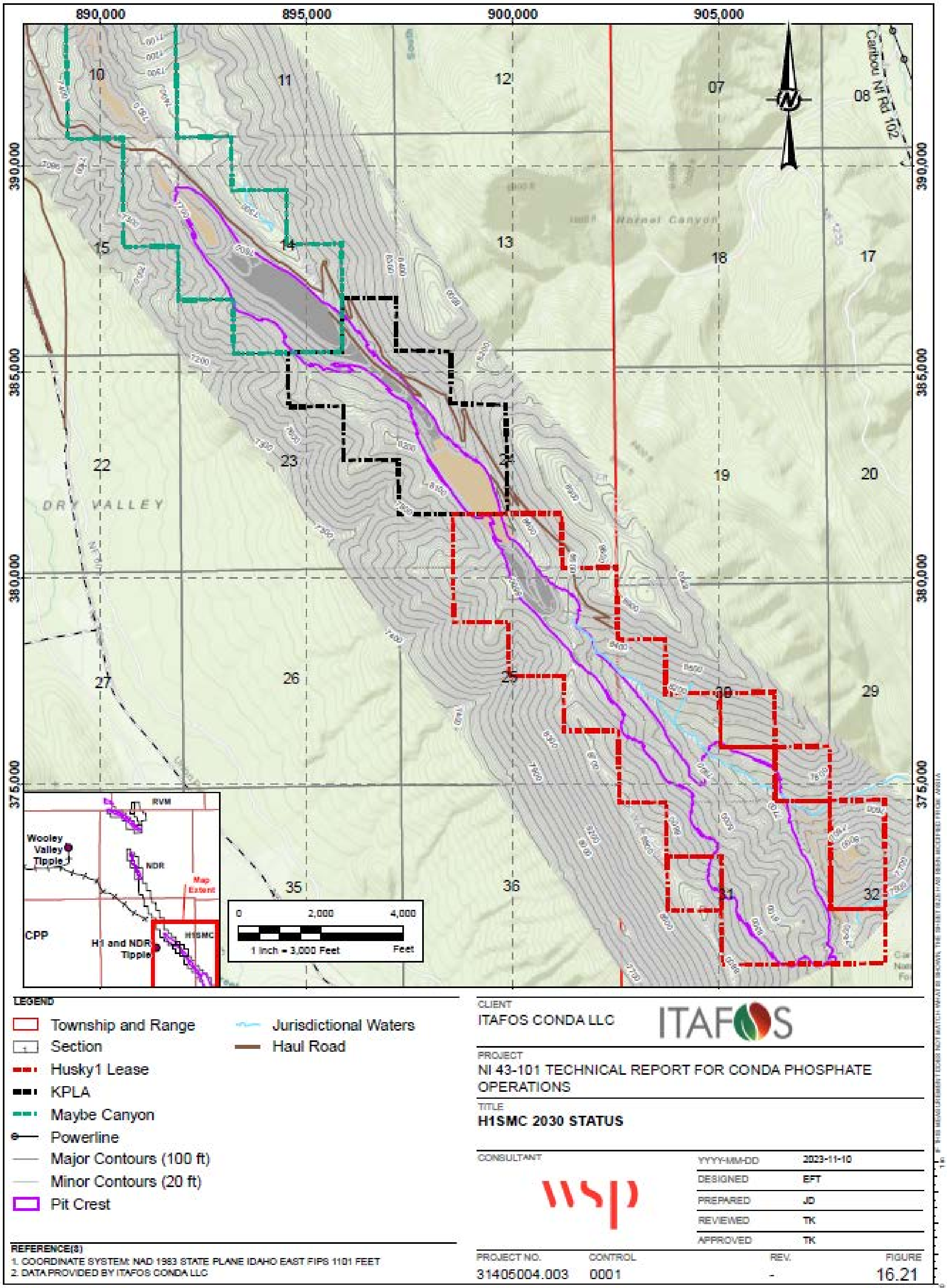


Figure 16.21: H1SMC Mine EOY 2030 Status

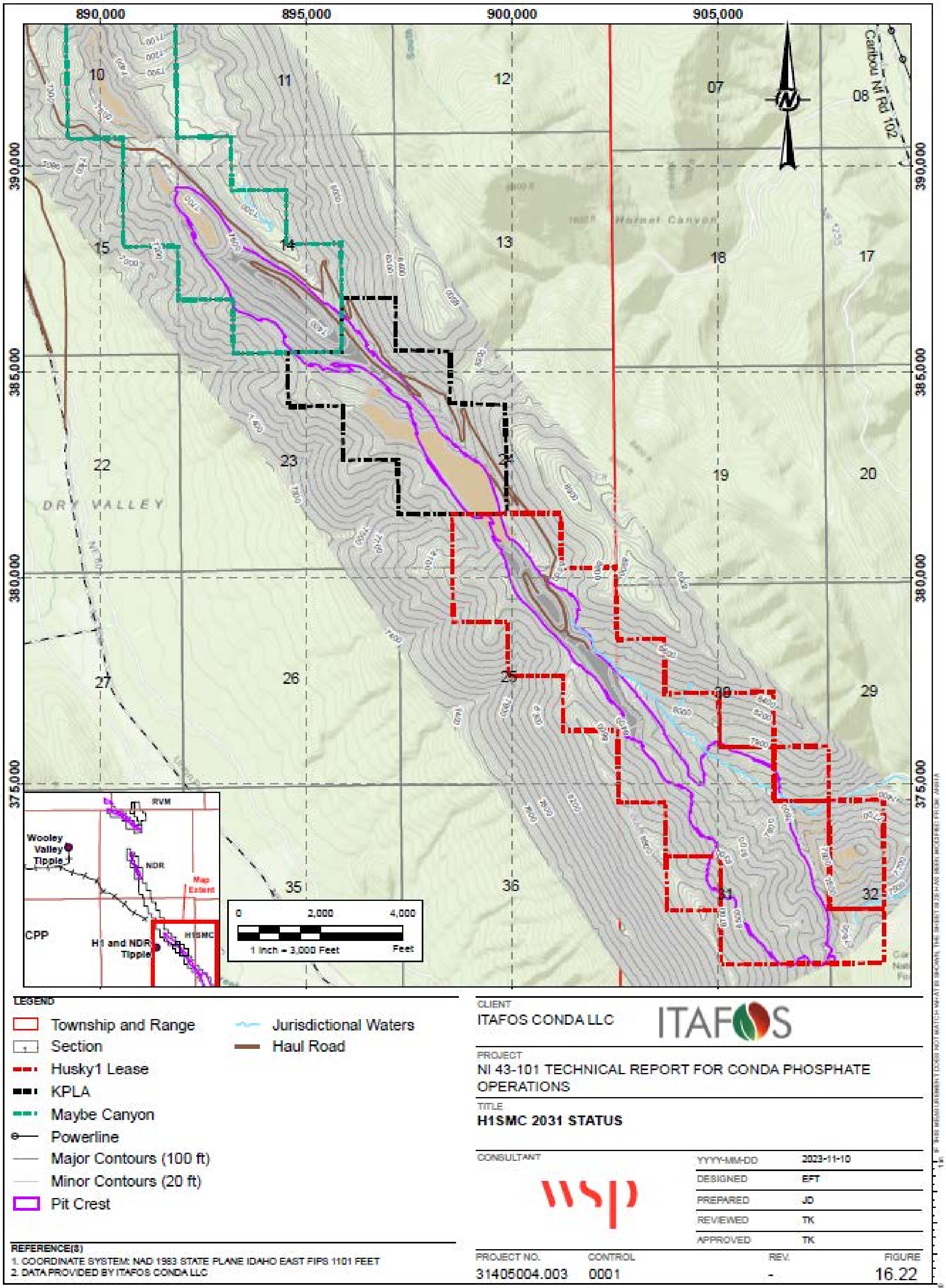


Figure 16.22: H1SMC Mine EOY 2031 Status

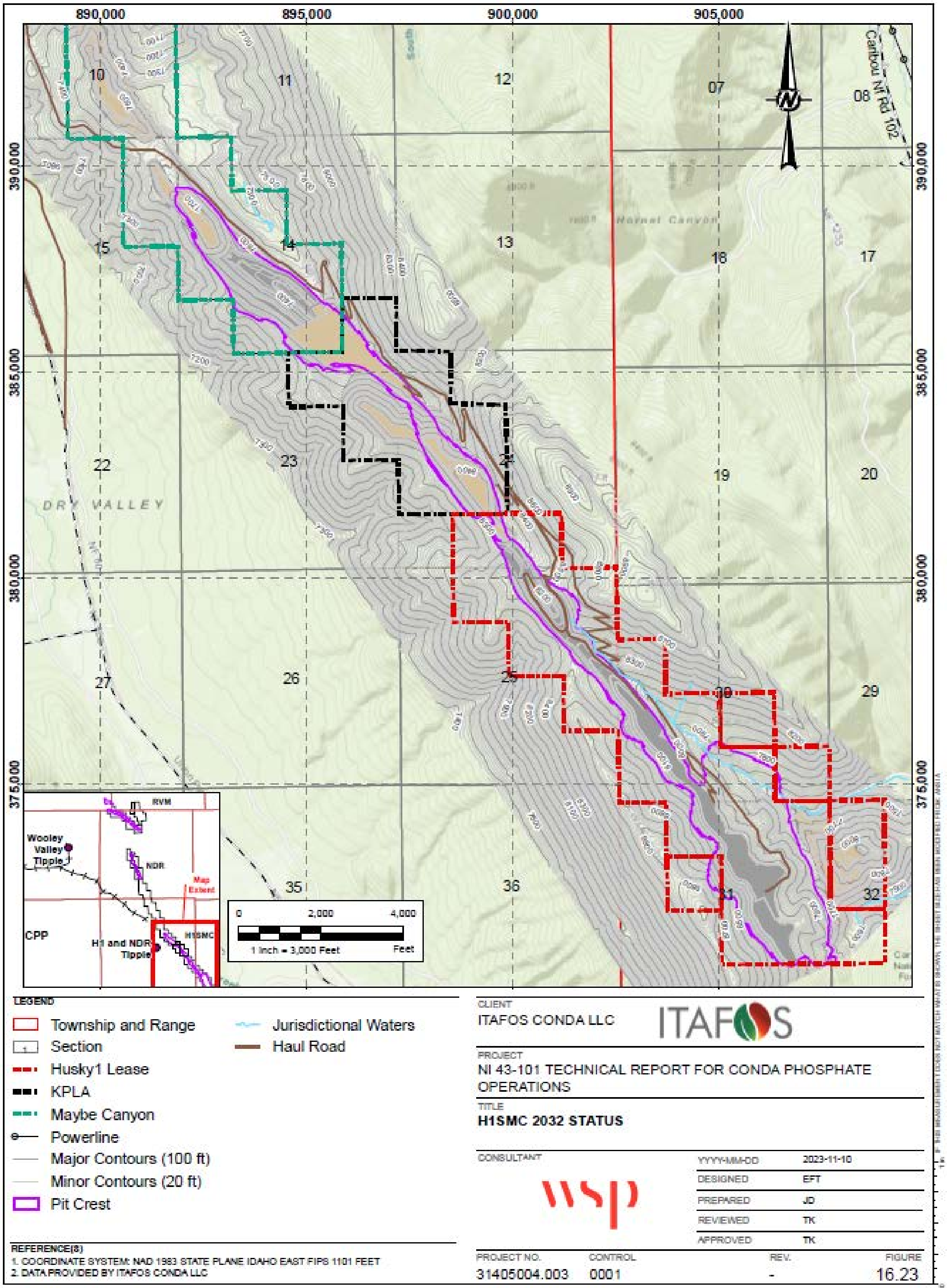


Figure 16.23: H1SMC Mine EOY 2032 Status

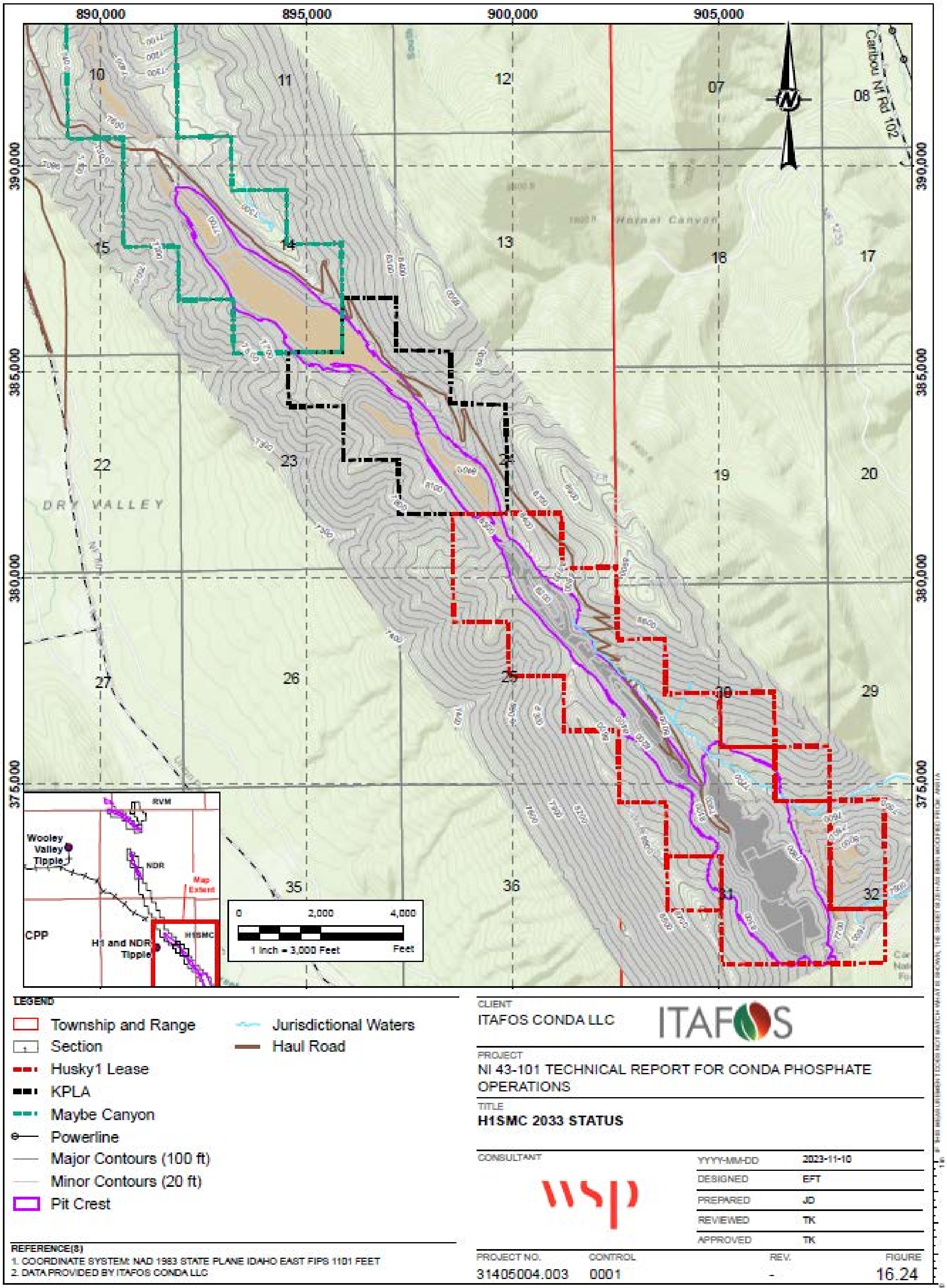


Figure 16.24: H1SMC Mine EOY 2033 Status

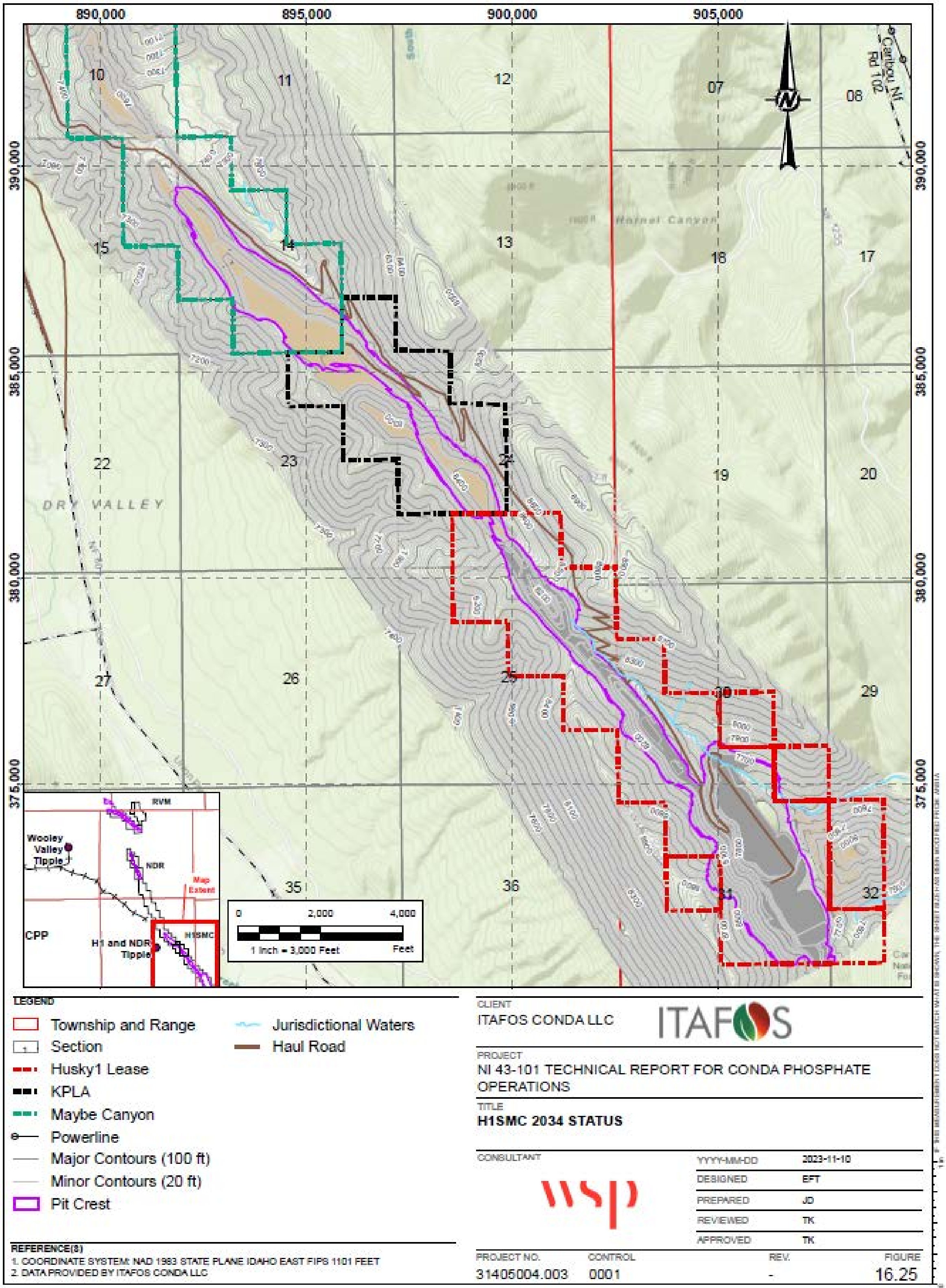


Figure 16.25: H1SMC Mine EOY 2034 Status

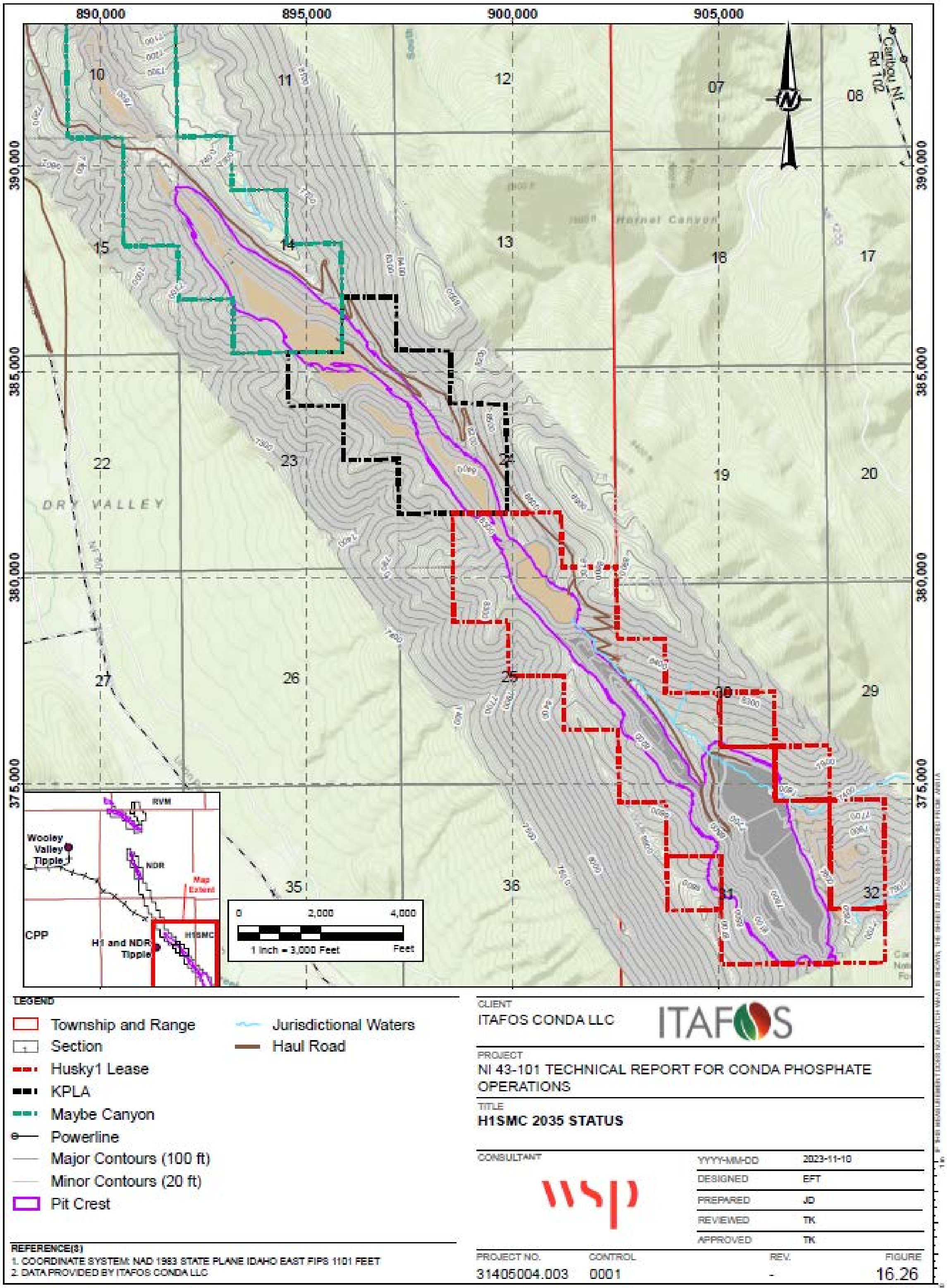


Figure 16.26: H1SMC Mine EOY 2035 Status

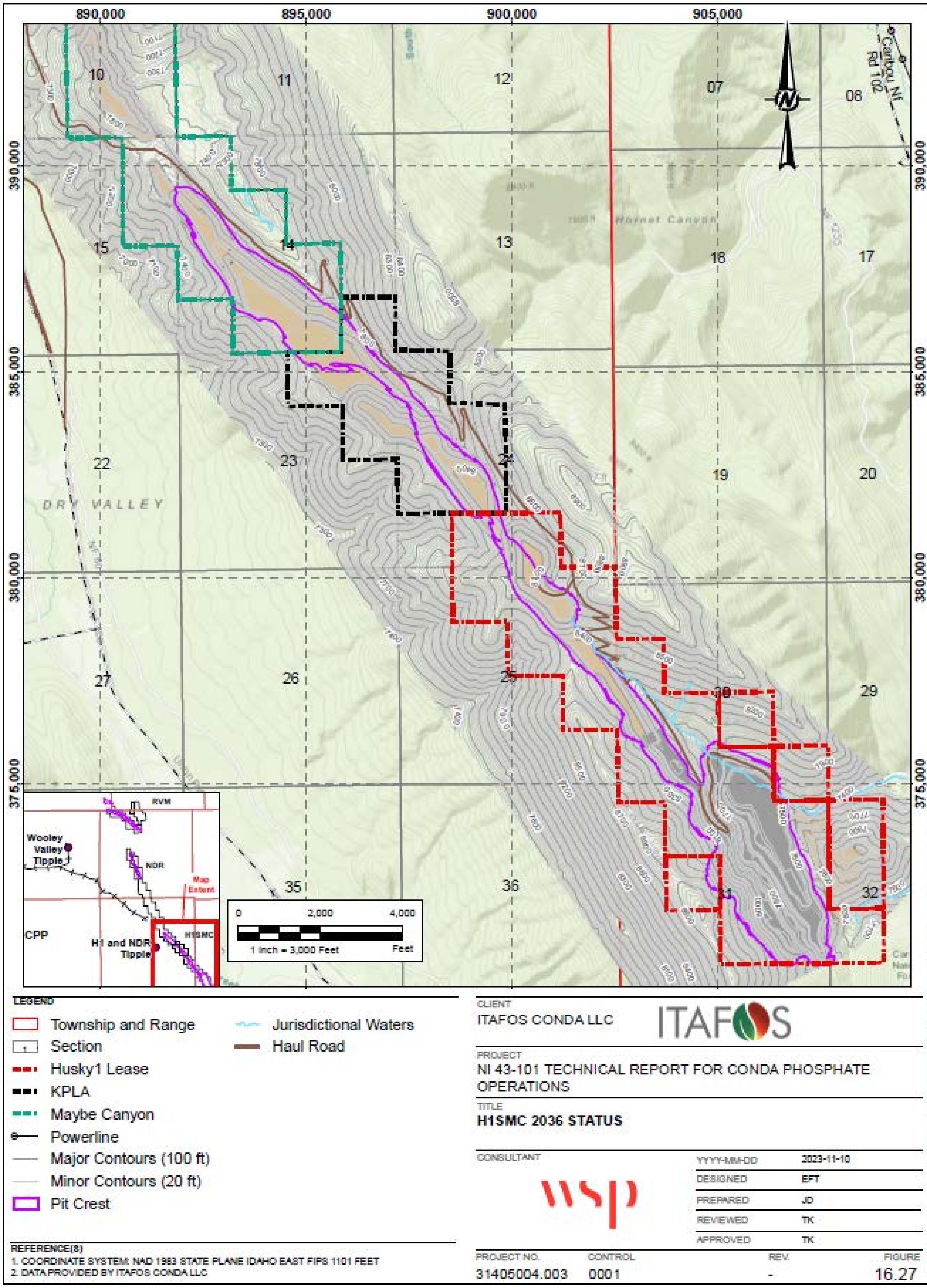


Figure 16.27: H1SMC Mine EOY 2036 Status

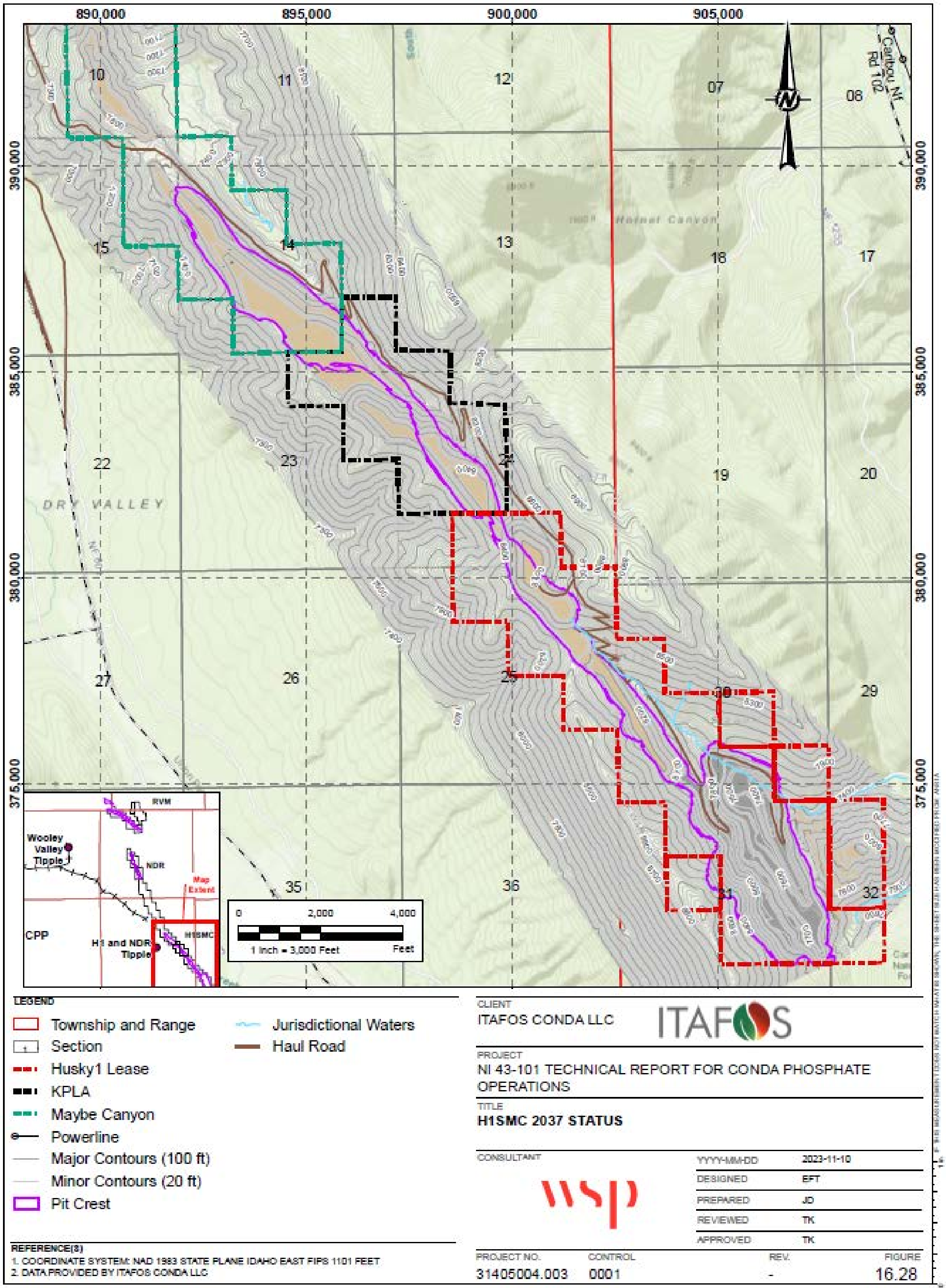


Figure 16.28: H1SMC Mine EOY 2037 Status

17.0 RECOVERY METHODS

This Item contains forward-looking information related to Handling and processing methods, plant design and equipment selection, and processing rates and recoveries for the project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: Plant feed characteristics and rate, mineral processing flowsheet, equipment selection and plant design, metals recovery factors.

The following chapter discusses the available information on the recoverability of phosphates ore at CPP. It describes the current Wash Plant flowsheet and its current performance over a long historical period and more recently, as well with ores that are similar to those intended for future extraction. It describes results and ore characterization results in order to interpret the suitability of the new ores to be processed efficiently through the existing Wash Plant in the case of North Dry Ridge. Finally, as is going to be the case for the Husky1 ores and beyond, it reviews the future beneficiation plant flowsheet, including modifications and additions to the circuit as well as plant design and equipment characteristics that are envisaged to process high MgO ores in particular.

17.1 Existing Wash Plant

The current Wash Plant at CPP was designed in the 1960s and its conception is suitable for the treatment of Idaho phosphates ores by the use of the following key processing steps: 1) The scrubbing of impurities from surface of the phosphate ores characterized by weak bonding such as slimes and other aggregates of clay materials 2) Selective crushing and grinding of the phosphate ore particles to liberate from fine impurities while reducing the generation of fine phosphate ore 3) Separation of fine impurities from ore at a -325 mesh cut for a final product in the 0.375 inch x 325 mesh range after dewatering.

The existing Wash Plant at CPP plays a crucial role in processing phosphate ore from the RVM mine to produce beneficiated phosphate rock for the PAP plant. The process involves several unit operations, including ball mills and a Tailings Pond facility. The phosphate ore is transported to the Wash Plant via a dedicated railway line spanning 13 miles. Upon arrival, the ore is dumped and stored adjacent to the Wash Plant. It undergoes preparation and then feeds into the Wash Plant for beneficiation, resulting in phosphate rock with the desired specifications for the PAP plant: P_2O_5>30%, MER<0.12, and SiO_2<10%.

Over the years, the Wash Plant has demonstrated its capability to handle and blend various grades of phosphate ore, including ROM, B+, High MgO, and High Al, sourced from different mining leases. This versatility has allowed the Wash Plant to consistently deliver high-quality ore.

The Wash Plant consists of physical unit operations designed to separate phosphate minerals from impurities such as aluminum silicates, clays, quartz, dolomite, carbonates, and iron-bearing minerals. The process begins with horizontal scrubbing to clean the surfaces of the phosphate ore, followed by sizing to separate the ore based on particle size. Coarse fractions requiring liberation undergo crushing in an impact crusher. The crushed material is then combined with the medium-sized phosphate ore and subjected to grinding in a rod mill to complete the liberation process. Sizing is again performed to separate the already liberated phosphate ore from the coarse-unliberated phosphate, which needs further grinding.

The fine-liberated phosphate ore, along with fine impurities, undergoes classification to separate the finest impurities (tailings) from the coarser-liberated phosphate ore (Wash Plant concentrate). The Wash Plant concentrate is dewatered and stored, while the tailings are sent to the Tailings Pond for settling and water recycling back to CPP. Before being utilized, the Wash Plant concentrate undergoes further grinding in two ball mills to provide the necessary feed for the PAP plant.

The process flowsheet, as shown in Figure 17.1, provides an overview of the process carried out at CPP, as described in this Item.

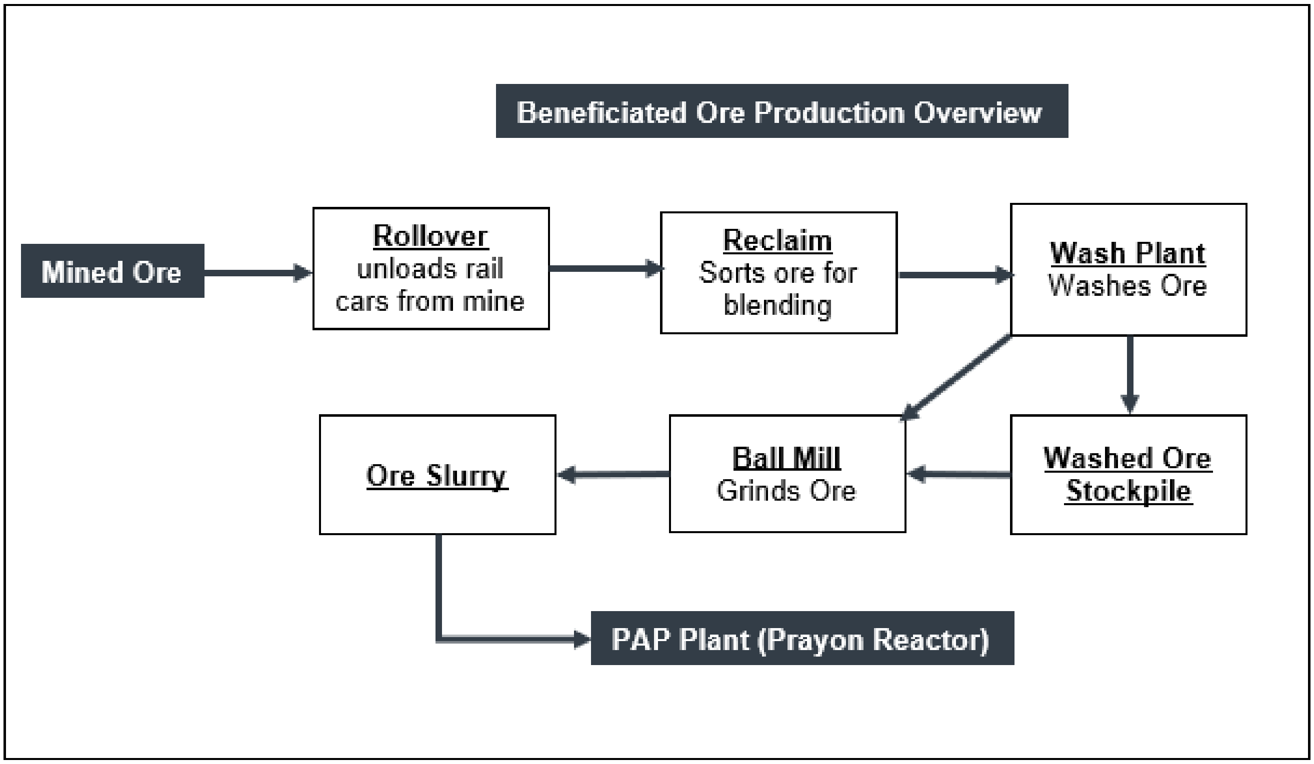


Figure 17.1: Overview of CPP Beneficiated Ore Production Process

17.1.1 Ore Reception

At CPP, partially blended phosphate ore of four qualities (Green, Blue, Red, and White) is received. Each type of phosphate ore is transported by unit trains to CPP, with each train dedicated to a specific ore type. The trains, operating five days a week for 30 weeks from April to October, have a nominal payload of 13,300 tons (133 cars of 100 tons capacity each). The phosphate ore is unloaded from each car using a "rollover" dumper. It is then directed to the corresponding stockpile for ROM, B+, or High Al. The ore is sampled as it is being fed to the beneficiation plant as a feed sample. The phosphate ore inventory at CPP typically ranges from 0.44 Mt to 1.54 Mt.

Dozers are used to manage the inventory stockpiles, reclaim phosphate ore from each quality stockpile, and blend different types of phosphate ore to feed the feeder hopper of the plant. The blended feed phosphate ore is screened using an 8-inch screen The material larger than 8 inches is returned to the stockpiles, while the material smaller than 8 inches feeds the Wash Plant.

17.1.2 Wash Plant

The -8-inch phosphate ore is conveyed via a belt conveyor to the horizontal scrubber. At this point, the phosphate ore is weighed and sampled. Sampling is conducted to determine moisture, chemical analysis, and simulate plant performance at the Chemical Laboratory. The average feed rate of phosphate ore to the horizontal scrubber is set at 350 tph (dry).

The phosphate ore feed is mixed with recycled water from the dewatering hydrocyclones to achieve a solids content of about 40% to 50% and then enters a 10 ft x 12 ft Horizontal Scrubber. In the scrubber, the surfaces of fluor or hydroxy-apatite are cleaned by removing attached impurities (slimes), weak inclusions, and aggregates of clay minerals. However, impure apatite is not liberated from attached impurities at this stage.

After the scrubbing process, the discharge from the horizontal scrubber undergoes sizing using a trommel to separate the valuable phosphate ore from impurity-containing minerals. The trommel consists of two concentric screens with openings of 0.375 inch and 1.375 inches.

The -0.375-inch size fraction is directed to the classification process. The 1.375-inch x 0.375-inch material (is sent to the rod mill for further processing, while the +1.375-inch size fraction is fed into an impact crusher.

The coarse size fraction of 8-inches x 1.375 inches, which is considered of medium hardness, is crushed in an impact crusher to liberate the impure phosphate fluor or hydroxy-apatite from coarse dolomite and other impurities such as aluminum silicates, clays, quartz, and iron-bearing minerals. This crushing operation is carried out in an open circuit, receiving about 20% of the total plant feed (70 tph). The crushed product is then combined with the 1.375-inches x 0.375-inch size fraction.

The combined material is gravity fed to the rod mill for further size reduction and liberation of impure fluor or hydroxy-apatite from contaminants. Based on characterization studies, it is determined that grinding the material to -0.375 inch is necessary for proper liberation.

The size reduction process takes place in an Allis Chalmers 9 ft x 12-ft Rod Mill using 4-inch diameter rods. The rod mill is loaded to occupy a volume of 30% to 35% and operated at 64.8% of the critical speed (16.56 rpm). The use of 4-inch diameter rods is chosen to prevent excessive grinding due to the relatively soft Bond Work Index of about 9.7 kwh/ton.

The ground product from the rod mill is then sized using a trommel attached to the mill. The trommel consists of two concentric screens with openings of 0.375 inch and 1 inch. This results in the production of three size fractions: +1 inch, 1 x 0.375 inch, and -0.375 inch. The +1-inch material is rejected, while the 1 x 0.375-inch size fraction returns to the rod mill as circulating load for regrinding. The -0.375-inch size fraction joins the -0.375-inch material for further processing in the classification stage.

Under these grinding conditions, the production of material finer than 325 mesh is limited to a range of 5.5% to 9.8%. This contributes to a small fraction of the overall tailings (-325 mesh) with a production rate of 32.11%.

In the Classification Sump, the phosphate-enriched particles from the scrubbing unit operation (-0.375 inch) and the rod milling unit operation (-0.375 inch) are combined. Recycled water from the Tailings Pond and dewatering hydrocyclones is added, and the slurry is pumped to a nest of five Krebs gMax-20 Hydrocyclones. These hydrocyclones are designed for a cutting mesh size of 325 mesh.

The purpose of the classification unit operation is to separate the enriched phosphate ore (0.375 inch x 325-mesh size fraction) from the -325-mesh material that contains impurities such as dolomite, quartz, aluminum silicates, clays, and iron-bearing minerals. Three Krebs gMax-20 Hydrocyclones are in operation, with two on standby. The overflow from these hydrocyclones constitutes the final tailings of the CPO and is pumped to the Tailings Pond. The plant tailings have a solids content of 11.24% and consist of 84.86% -325-mesh particle size material. The tailings represent a yield of 32.11% by weight of the feed.

The underflow from the Krebs gMax-20 Hydrocyclones, which is the 0.375 inch x 325-mesh material of enriched phosphate ore, is directed to a second sump. In this sump, recycled water from various sources is added, including the Tailings Pond, dewatering hydrocyclones, filter or extractors recycled water, make-up water, and raw water. The 0.375 inch x 325-mesh product is then pumped to the dewatering unit operations.

The classification system has a relative efficiency of 90.23% based on data from 2018 to 2019 at the cutting mesh size of 325 mesh. The overall efficiency of the classification hydrocyclones is 69.23%.

The dewatering of the enriched 0.375 inch x 325-mesh phosphate ore is carried out using six Krebs D15B hydrocyclones, followed by filtration in two belt filters (extractors). The dewatering hydrocyclones have a 3-inch diameter apex and a 6-inch diameter vortex finder. They are arranged in two sets of three hydrocyclones each, with five hydrocyclones in operation and one on standby.

The overflow from the dewatering hydrocyclones has a low solids content of 4.3% and can be recycled as make-up water to the water distribution system of the plant. It is recycled back to the sump of the dewatering hydrocyclones and the feed chute of the horizontal scrubber. The underflow of the dewatering hydrocyclones serves as the feed to the belt filters, or extractors.

The belt filters used are EIMCO Model 67 types, with one of them equipped with a blower for drying the cake. The cake produced from the filtration process contains 13.97% moisture and represents the concentrate at a yield of 67.89%. This concentrate, or beneficiation product, is stored in a bin or transferred using a reversible belt conveyor to a stockpile with a total storage capacity of 60,000 tons.

To process the Wash Plant concentrate, it is reclaimed from the stockpile using dozers or front-end loaders and fed into a belt conveyor hopper. Two belt conveyors then distribute the concentrate, with one feeding the chute of the North Ball Mill and the other feeding the South Ball Mill. The product is ground in two FFE ball mills that run in parallel, each measuring 11.5 ft x 21.5 ft.

The ball mills receive the 0.375-inch x 325-mesh beneficiated phosphate concentrate to be ground to a 98% -35-mesh size fraction, which allows for an acceptable recovery in the PAP (phosphoric acid plant). The grinding media used in these mills are 2-inch diameter Cr-Mo steel balls.

The slurry of the enriched phosphate ore, ground in the ball mills, is stored in an agitated tank and can be reclaimed as needed by the PAP (phosphoric acid plant) for further processing.

In the Wash Plant, various pumps, including horizontal-centrifugal pumps and vertical-centrifugal pumps, are used to facilitate the movement of liquids and slurries. Additionally, belt conveyors are employed to distribute wet solid products. Table 17.1 is a summary list of the pumps and belt conveyors used at the Wash Plant.

Table 17.1: CPP Wash Plant Pumps and Belt Conveyors List

Item	Count
Horizontal-centrifugal pumps	
Rod Mill Oversize pump	1
Rod Mill Product (E and W) pumps	2
Classification Stage pump	1
Classification Hydrocyclone Underflow to Dewatering Hydrocyclones pump	1
Tailings pumps (N and S)	2
Drier Discharge pump	1
Extractor Booster pump	1
Ball Mill to PAP pumps (E and W)	2
Tailings Pond Barge pump	1
Tailings Pump Booster pump	1
Extractor Vacuum pumps and blower	2
Vertical-centrifugal pumps	
Wash Plant Floor pumps	2
Ball Mill Floor pump	1
Belt conveyors	
Horizontal Scrubber belt conveyor	1
Inner Screen-Rod Mill belt conveyor	1
Washed Product belt conveyor	1
Reversible Washed Product belt conveyor	1
Washed Ore Bin belt conveyor	1
Washed Ore Stockpile belt conveyor	1

These pumps and belt conveyors play crucial roles in the transportation and distribution of materials throughout the Wash Plant, facilitating the processing and handling of the phosphate ore and its beneficiation products.

The tailings from the Wash Plant, which consist of fine phosphate ore with impurities, are pumped to the Tailings Pond using two horizontal centrifugal pumps (N and S) with 400HP and 300 HP, respectively. The tailings have a solids content of 11.24% and contain 84.86% of particles sized at -325 mesh. The yield of these tailings represents 32.11% of the weight percentage of the feed.

At the Tailings Pond, the tailings are discharged, forming a fine sand beach, while the decanted water is directed to a deep-water recycling area. The recovered water, which has minimal solids content, is pumped back to the plant using a barge pump and a booster pump in series. The pressure for this pumping operation ranges from 65 to 95 pounds per square inch (psi).

To accommodate the ongoing deposition of tailings, the dike around the Tailings Pond is elevated by 1.6 feet per year. With the current permitting, the maximum projected elevation for the dike is set at 6,235 feet, which is 23 feet higher than the current elevation.

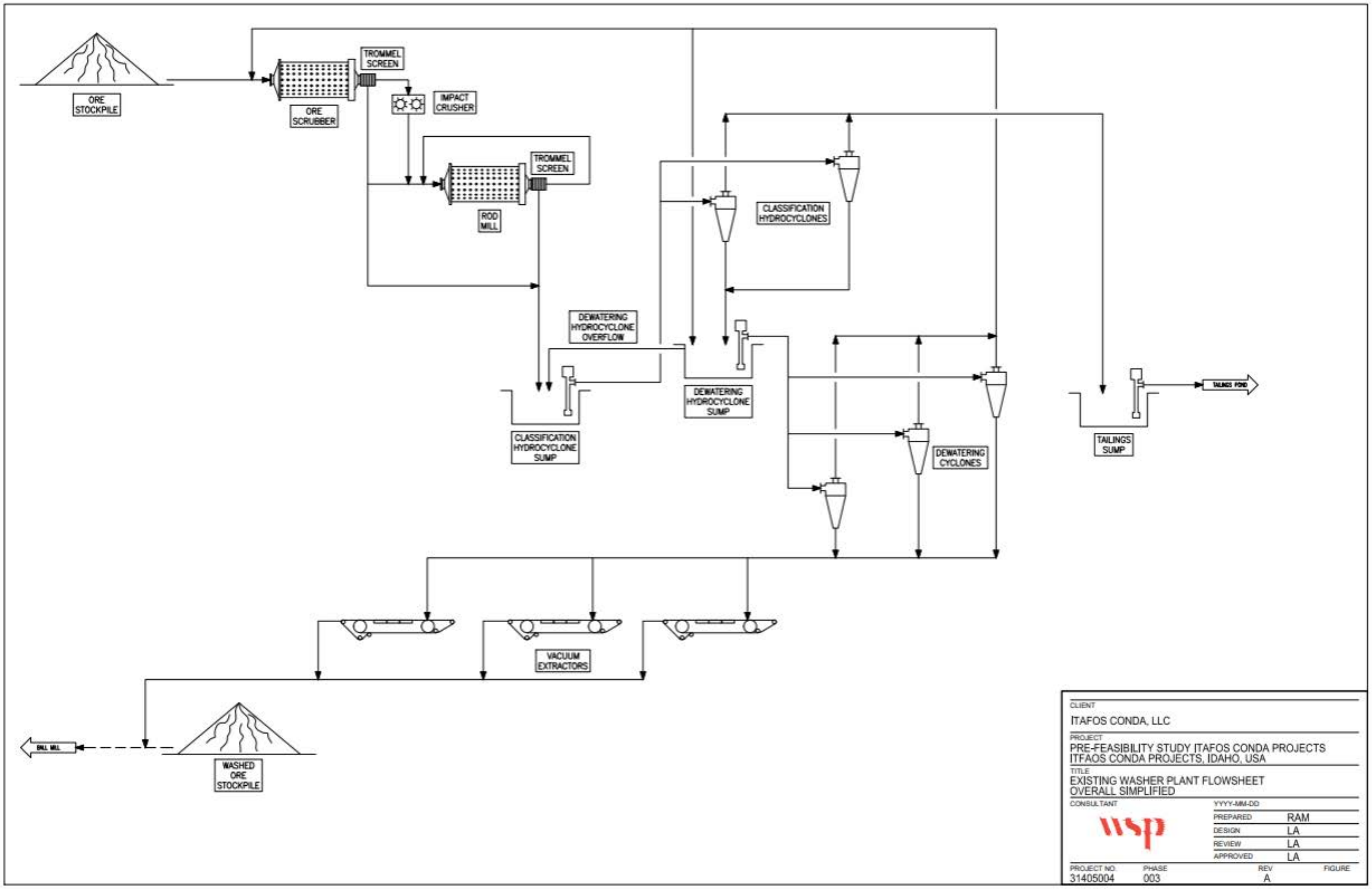


Figure 17.2: Conda Wash Plant Flowsheet

17.2 Materials and Water Distributions and Installed Power

The total phosphate ore feed to the Wash Plant is 350 tph (tons per hour), and the estimated total water usage for the process, including raw/fire and potable/gland seal water, is 4,471 gpm (gallons per minute).

The material and water balance is depicted below, providing average values for both materials and water. However, it should be noted that the estimates have a range of ± 25%. Therefore, the actual water usage could vary between 3,400 gpm and 5,600 gpm. Finally, installed power is approximately 2,150 kW.

Table 17.2: CPP Wash Plant Water Balance

In	gpm	Out	gpm
Feed water (moisture)	174	Tailings water recycled	3,908
Recycled water from tailings	3,908	Concentrate moisture and ball mill water	563
Potable gland seal water	120		
Make-up water	269		
Total	**4,471**		**4,471**

17.3 Process Control and Wash Plant Sampling

The Wash Plant incorporates a comprehensive sampling and control system to monitor the quality and performance of the process. The sampling points include the loading of the unit train cars, the belt conveyor feeding the horizontal scrubber, the reversible belt conveyor receiving the filter cakes, and the sump of the tailings pumps. These samples undergo chemical analysis at the Chemical Laboratory using ICP-OES to determine various parameters such as moisture content, P_2O_5, CaO, MgO, Al_2O_3, Fe_2O_3, and other elements.

In addition to the daily sampling, the phosphate feed rate is controlled using a weight meter on the 7 belt and a level control on the surge bin. The pressure gauge on the nest of the Krebs gMax-20 Hydrocyclones is used to control the classification stage, while gamma ray density meters in the overflow and underflow streams control the dewatering Krebs D15B Hydrocyclones. The belt filters are controlled using the vacuum pressure pump and blower to ensure proper drying of the washed phosphate ore. Weight meters are employed to control the feed to the ball mills and the reversible Washed Product belt conveyor.

The metallurgical balance is calculated based on the chemical analyses of the phosphate ore feed, washed product, and tailings, as well as the weights of the feed and washed product. Moisture content is determined for the phosphate ore feed and washed product, and the solids content of the tailings is obtained from the samples sent to the Chemical Laboratory.

17.4 Performance

The performance of the Wash Plant is described in the Metallurgical Balance (Item 13.0). The operation of the Wash Plant meets the specifications required by the PAP, resulting in an enriched phosphate ore with the desired characteristics. The beneficiation process yields a product with 30.55% P_2O_5 and 43.49% CaO, while reducing impurities. The final tailings contain 14.97% P_2O_5 and 22.29% CaO, with concentrated impurities. The metallurgical balance confirms a P_2O_5 recovery of 81.18% and the rejection of impurities.

These results align with historical data and demonstrate that the RVM and LCM phosphate ores do not pose a risk to the MAP, SPA, and APP production and quality.

17.5 Wash Plant Upgrades for Processing H1SMC Ores

This Item incorporates the Process Design Basis and Process Design Criteria for the modified Wash Plant plans prepared by JESA Technologies LLC ("JESA") describing the washer unit operations, flotation feed preparation, flotation tests results, potential modified flowsheet, and conclusions. The potential modified flowsheet is provided in Figure 17.3.

17.5.1 Overview

The modified CPP wash plant is designed to operate similarly to the existing plant but with new equipment and a new flotation circuit. The plant is divided into three main sections: the wash plant, flotation plant, and dewatering plant.

In the wash plant section, the ore is fed into the plant through a ROM transfer conveyor and then into an ore hopper. A variable speed scrubber belt feeder is used to remove ore from the hopper and feed it into the drum washer. Reclaim water is added to the ore scrubber to maintain the correct percentage of solids. A magnetic flow meter measures the water flow, and a PID controller adjusts the water control valve to maintain the desired water-to-solids ratio. The slurry from the ore scrubber discharges onto a trommel screen, where oversize material is cleaned with the addition of reclaim water. The oversize material goes to the crusher, while the undersize material feeds onto a vibrating screen.

The flotation plant section consists of coarse and fine conditioners, an Eriez HydroFloat separator for coarse feed, and two Eriez Flotation Columns for fine feed. The primary purpose of the flotation plant is to float the carbonate gangue mineral (dolomite) away from the phosphate mineral and produce four outputs: coarse concentrate, fine concentrate, coarse tailings, and fine tailings. Auxiliary equipment, such as reagent tanks and a flotation water tank with process water reuse pumps, supports the flotation process.

The dewatering plant section includes de-sliming cyclones, dewatering cyclones, and horizontal vacuum belt filters (extractors). The desliming cyclones remove the fine fraction from the washed product, which contains a high amount of MgO. The dewatering cyclones perform the initial dewatering step, increasing the feed to the extractors to around 55% solids. The extractors further remove water, increasing the final concentrate to approximately 80% solids. The water removed by the extractors is reused in the secondary desliming cyclone feed pump box. The final concentrate is conveyed to the existing washed ore bins. The dewatering section produces two outputs: the final product and secondary slimes.

The waste streams from the three sections of the plant are combined in a general mill tails pump box and pumped to the existing waste impoundment area. Solids are consolidated in the impoundment area, while clarified water is collected and returned to the plant for reuse.

The modified CPP wash plant is expected to operate in a new building with new equipment and a new flotation circuit, maintaining a steady state feed rate and producing three main outputs: washed product, flotation feed, and primary slimes. The flotation plant is designed to float dolomite away from the phosphate mineral, resulting in coarse and fine concentrates, as well as coarse and fine tailings. The dewatering section utilizes cyclones and extractors to remove water from the concentrate, producing a final product and secondary slimes. The waste streams are combined and processed, with solids being consolidated and water recycled back to the plant.

Table 17.3 details the list of equipment that will form part of the CPP modified Wash Plant.

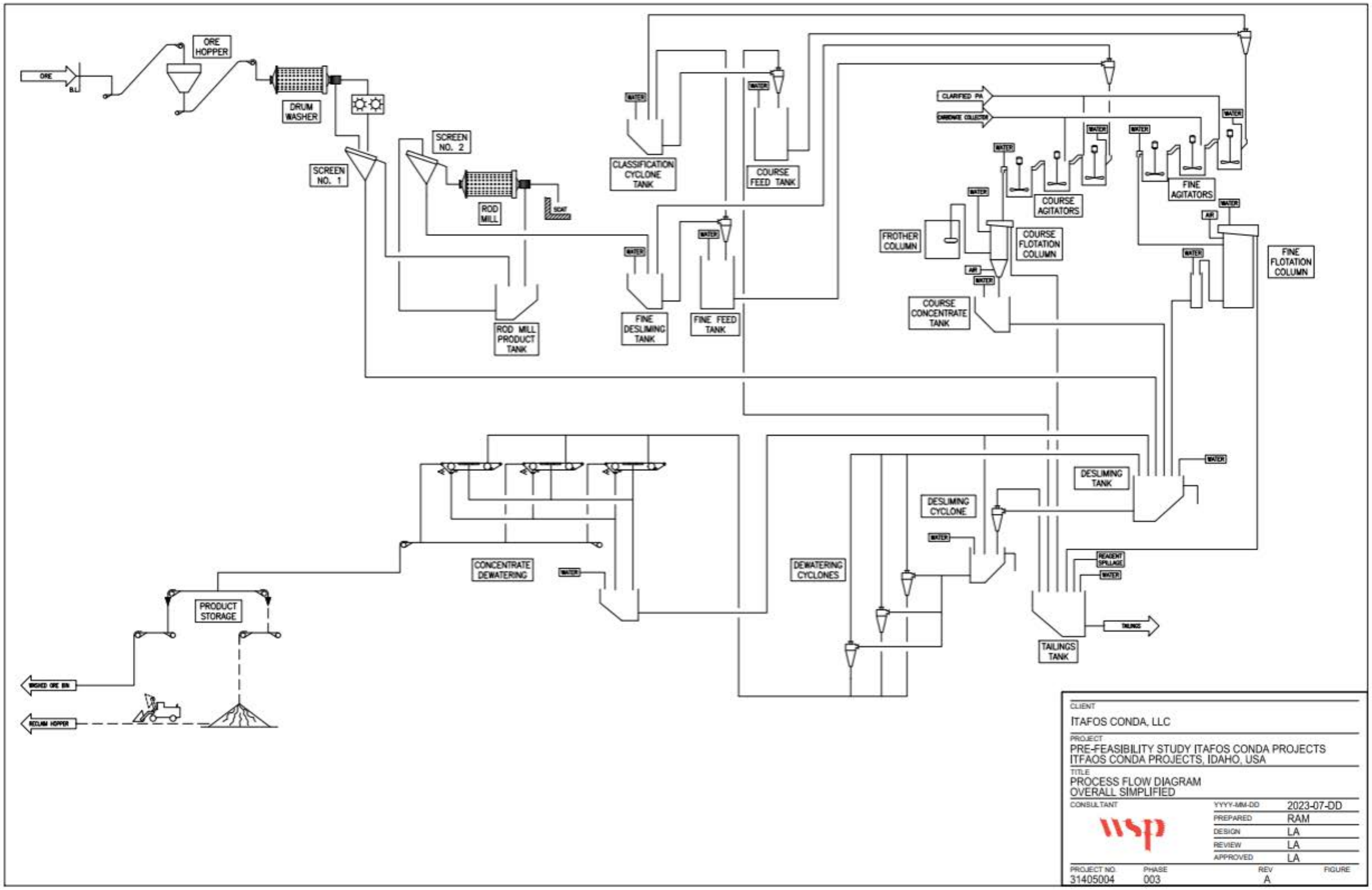


Figure 17.3: Conda Future Wash Plant Flowsheet

Table 17.3: CPP Modified Wash Plant Main Equipment List

Item	Status	Description	Unit Capacity					Installed Power HP	
			TPH	gpm	ft^3	Ton	Pump TDH (ft)	Installed	Operating
Ore Conveyor No. 7	Existing	#7 Belt Conveyor						60	60
Ore Conveyor	New	New belt conveyor feeding the Ore Hopper	413					60	60
Ore Hopper	New	Open Top Surge Hopper	413		1,357				
Drum Washer	New	Horizontal Rotary Drum Scrubber	413					400	400
Crusher	New	Metso (Nordberg) NP20 Impact Crusher	168					844	844
Screen No. 1	New	Inclined Vibrating Screen	412	1,890				50	50
Screen No. 2	New	Inclined Vibrating Screen	693	2,909				75	75
Mill	New	Metso-Outotec Ball Mill	231	534				1,700	1,700
Mill Pump	New	Centrifugal Slurry Pump		2,755			100	400	200
Mill Area Sump Pump	New	Vertical Sump Pump		500			100	40	40
Classification Cyclone Tank	New	Open Top Pump Box		3,704	430				
Classification Cyclone Pump	New	Centrifugal Slurry Pumps		3,704			140	500	250
Coarse Feed Tank	New	Coarse Feed Storage Tank		266					
Fine Feed Tank	New	Fine Feed Storage Tank		347					
Coarse Feed Tank Agitator	New	4-blade, Agitator, direct drive						200	200
Fine Feed Tank Agitator	New	4-blade, Agitator, direct drive						200	200
Coarse Feed Pump	New	Centrifugal Slurry Pumps		671			100	100	50
Fine Feed Pump	New	Centrifugal Slurry Pumps		875			100	120	60
Fine Desliming Pump	New	Centrifugal Slurry Pump		3,928			140	500	250
Coarse Agitators	New	Direct Drive, 4-blade Impeller						120	120
Fine Agitators	New	Direct Drive, 4-blade Impeller						225	225
Coarse Flotation Column	New	Eriez Hydrofloat Cell	69	270					
Fine Flotation Column	New	Eriez Column Flotation Cells	97	600				150	150
Coarse Concentrate Pump	New	Centrifugal Slurry Pumps		432			100	80	40

Item	Status	Description	Unit Capacity					Installed Power HP	
			TPH	gpm	ft^3	Ton	Pump TDH (ft)	Installed	Operating
Coarse Concentrate Tank	New	Open Top Pump Box		432	61				
Fine Concentrate Pump	New	Centrifugal Slurry Pumps		794			100	100	50
Fine Concentrate Tank	New	Open Top Pump Box		794	61				
Product Desliming Tank	New	Open Top Pump Box		4,728	668				
Product Desliming Pump	New	Centrifugal Slurry Pump		4,728			140	900	450
Tailings Tank	New	Open Top Pump Box		8,055	1,104				
Product Dewatering Tank	New	Open Top Pump Box		1,980					
Product Dewatering Pump	Existing	Centrifugal Slurry Pump		1,960	308				
Product Dewatering Pump	New	Centrifugal Slurry Pump		1,980				250	250
Tailings Pump	New	Centrifugal Slurry Pump		8,504			120	1,000	500
Water Collection Tank	New	Open Top Pump Box		1,847	430				
Water Collection Pump	New	Centrifugal Slurry Pump		1,847			100	150	75
Collector Mix Tank Agitator	New	Direct Drive, 4-blade Impeller					40	125	125
Collector Use Tank Agitator	New	Direct Drive, 4-blade Impeller						100	100
PA Storage Tank Agitator	New	Direct Drive, 4-blade Impeller					40	100	100
PA Use Tank Agitator	New	Direct Drive, 4-blade Impeller					50	100	100
Reagent Area Sump Pump	New	Vertical Sump Pump		250			120	25	25
Process Water Pump	New	Centrifugal Slurry Pump		7,957				800	400
Air Compressor	New	Rotary Screw						50	25
Flotation Sump Pump	New			500			100	40	40

17.5.2 Scrubbing, Crushing, Milling, Classification, and Feed Storage

The crusher product and trommel screen undersize are discharged onto screen No.1. Both products are screened and reclaim wash water is added via spray nozzles to wash any fine material through the screen aperture. Screen No.1 separates the undersize from the trommel screen and crusher discharge, making a 500 µm separation. The undersize from Screen No.1, which is the washed product, flows directly to the pump box that feeds the product de-sliming cyclones. This stream has a sufficient grade to bypass flotation entirely.

The oversize material from vibrating screen No.1 discharges into the rod mill product tank, while the undersize material gravitates into the product de-sliming tank. The +500 µm material from screen No.1 is ground to pass 500 µm in a rod mill operating in closed-circuit with vibrating screen No.2.

The slurry from the rod mill pump is sent to vibrating screen No.2, where reclaim wash water is added to wash the fine material through the screen aperture. The undersize material from vibrating screen No.2 discharges into the classification cyclone tank. The oversize material from vibrating screen No.2 feeds into the rod mill and the milled product overflows into the rod mill trommel screen.

The rod mill trommel undersize discharges into the rod mill product tank, while the trommel screen oversize material goes to a bunker.

The slurry from the classification cyclone tank is pumped by the classification cyclone pumps to the classification distribution cyclone header, which feeds the classification cyclones. The underflow from the classification cyclones gravitates into the coarse feed tank, which includes a coarse feed tank agitator. The coarse feed pumps then pump the slurry to the coarse conditioner dewatering header, which feeds the coarse dewatering cyclones. The overflow from the coarse dewatering cyclones gravitates into the classification cyclone tank.

The slurry from the fine de-sliming pumps is sent to the fine de-sliming cyclone distribution header, which feeds the fine de-sliming cyclones. The underflow from the fine de-sliming cyclones gravitates into the fine feed tank, which includes a fine tank agitator. The fine feed pumps then pump the slurry to the fine dewatering cyclone distribution header, which feeds the fine dewatering cyclones. The overflow from the fine dewatering cyclones gravitates into the fine de-sliming tank.

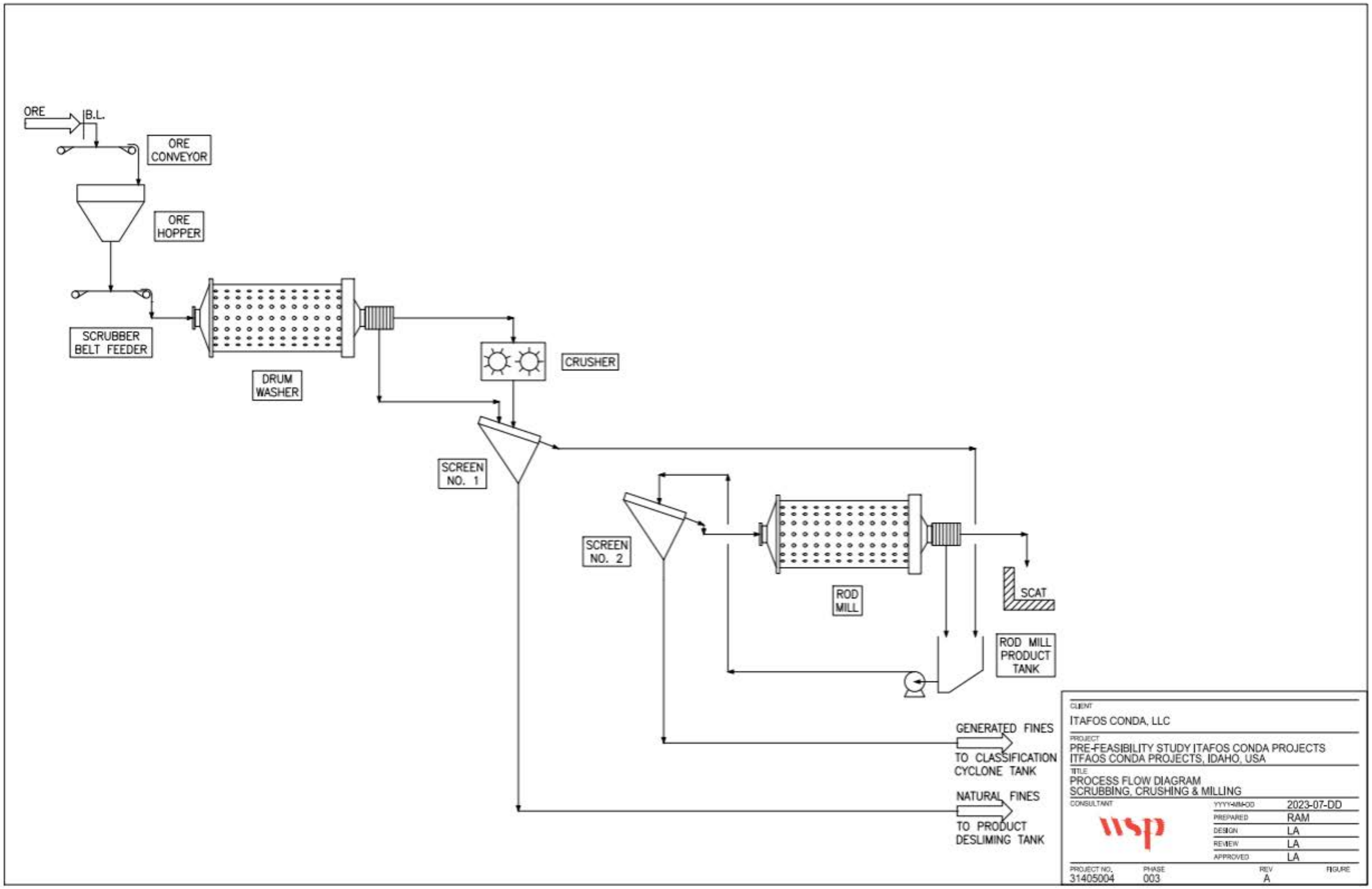


Figure 17.4: Conda Future Wash Plant - Scrubbing, Crushing, and Milling

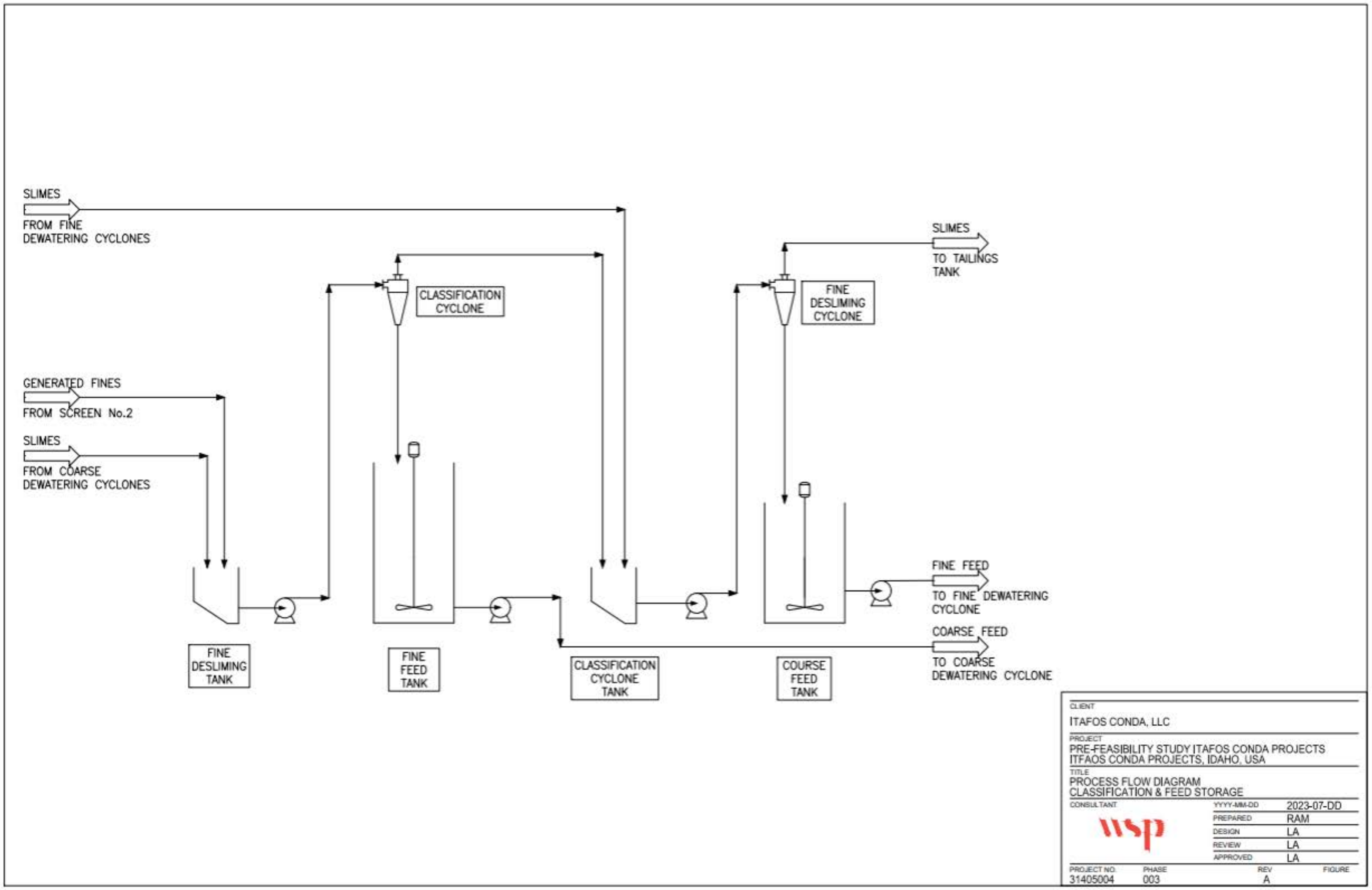


Figure 17.5: Conda Future Wash Plant - Classification and Feed Storage

17.5.3 Flotation

The flotation circuit consists of two separate circuits.

17.5.3.1 Coarse Flotation

The overflow from the coarse dewatering cyclones gravitates back to the classification cyclone tank. The underflow stream from the coarse dewatering cyclones goes into the coarse pre-conditioner tank, where dilute phosphoric acid is added via the PA use pumps. The slurry then cascades into the coarse conditioner tank, and collector is added via the collector use pumps. From there, the slurry flows into the coarse conditioner tank and finally into the coarse flotation column.

In the coarse flotation column, plant air and flotation water are added to assist in the flotation process. The tails overflow from the top of the coarse flotation cell and gravitate to the tailing's tank, while the concentrate flows out from the bottom into the coarse concentrate tank.

17.5.3.2 Fine Flotation

Similarly, the overflow from the fine dewatering cyclones gravitates back to the fine de-sliming tank. The underflow stream from the fine dewatering cyclones goes into the fine pre-conditioner tank, where dilute phosphoric acid is added via the PA use pumps. The slurry then cascades into the fine conditioner tank, and collector is added via the collector use pumps. From there, the slurry flows into the fine conditioner tank and finally into the fine flotation column.

In the fine flotation column, plant air and flotation water are added to assist in the flotation process. The tails overflow from the top of the fine flotation column and gravitate to the tailing's tank, while the concentrate flows out from the bottom, feeding into the subsequent fine flotation column. The process is repeated, and the final fine flotation column concentrate discharges into the fine concentrate tank.

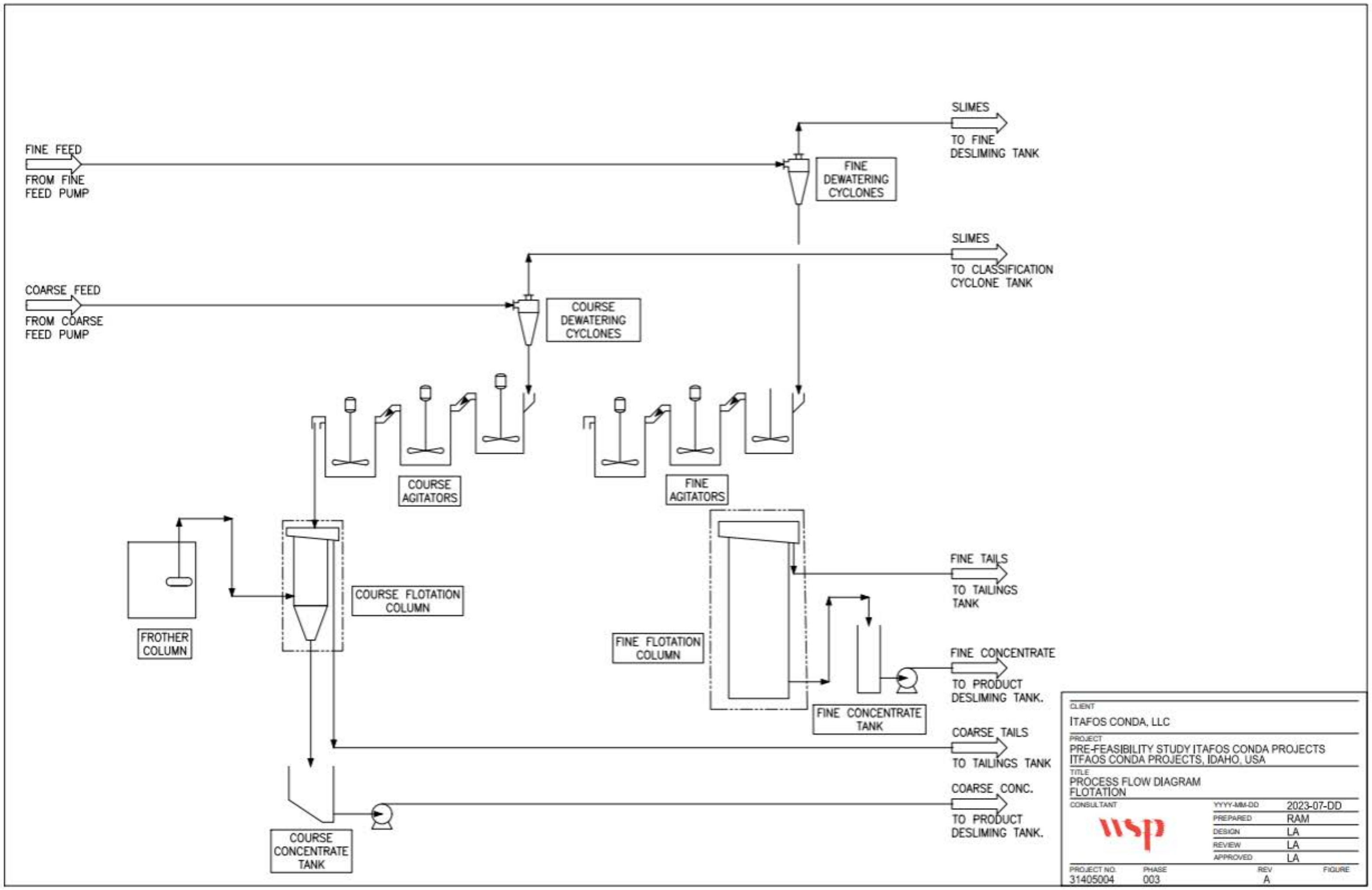


Figure 17.6: Conda Future Wash Plant – Flotation

17.5.4 Dewatering

The dewatering circuit consists of a combination of new and existing equipment. The washed product, coarse flotation concentrate, and fine flotation concentrate all feed into the product de-sliming tank. The combined products are pumped using product de-sliming pumps to the product de-sliming cyclone distribution header and product de-sliming cyclones. The underflow from the product de-sliming cyclones gravitates to the product dewatering tank. From there, the product dewatering pumps (including existing and new pumps) transfer the slurry to their respective distribution headers for product dewatering cyclones.

The overflow from the product de-sliming cyclones gravitates into the tailing's tank. The tailings pumps then operate in duty standby mode to pump the tailings slurry to the tailings pond.

The overflow from the product dewatering cyclones gravitates back to the product de-sliming tank, while the underflow from the product dewatering cyclones gravitates to the existing extractor circuit.

Water from various sources is collected in the water collection tank. This includes filtrate from extractors, filter cloth spray water, product conveyor wash water, vacuum pump seal water, ball mill return water, reclaim water, and wash plant floor sump pump water. The water collection pumps operate in duty standby mode to pump the collected water back into the process.

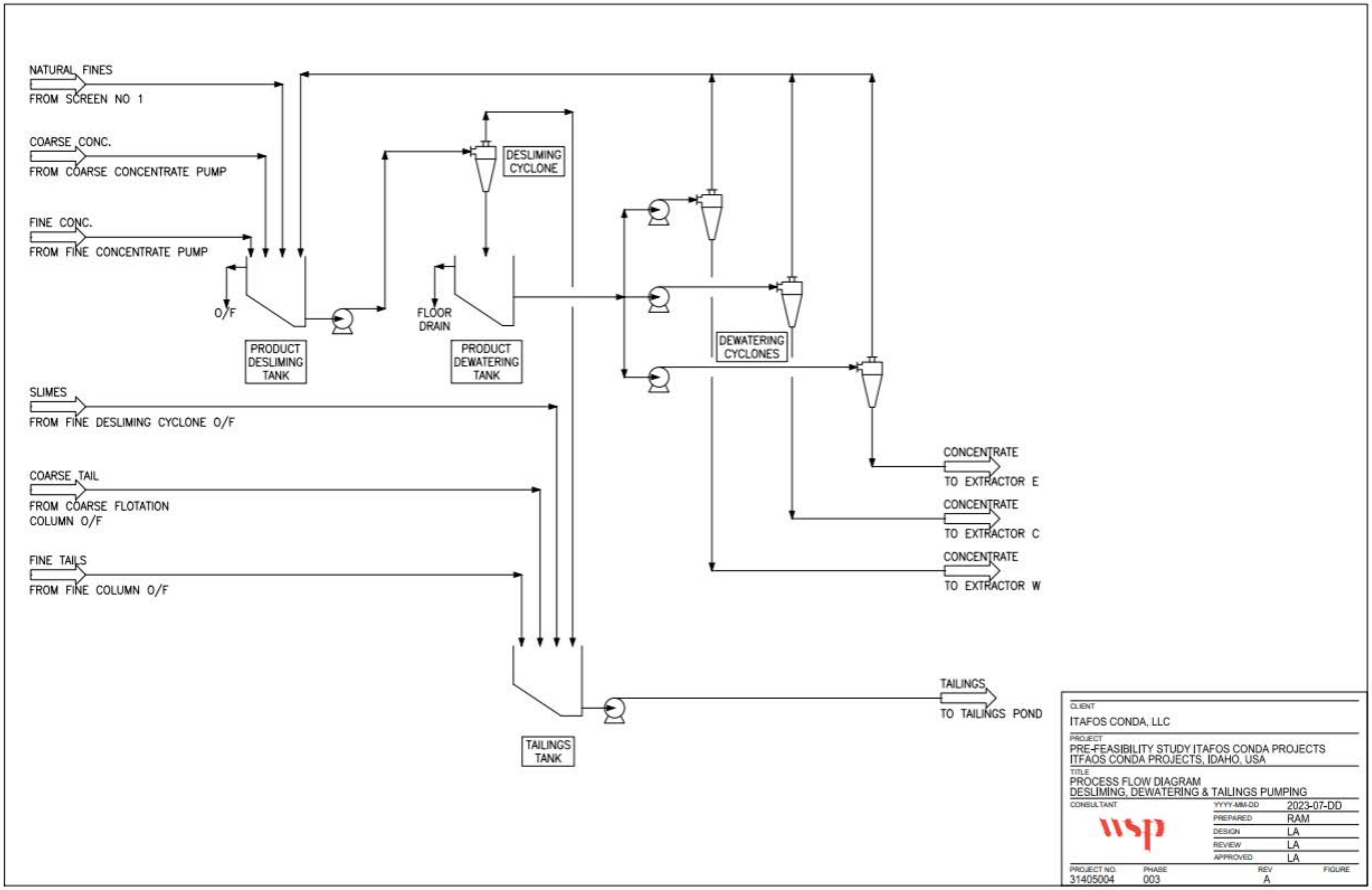


Figure 17.7: Conda Future Wash Plant - Desliming, Dewatering, and Tailings Pumping

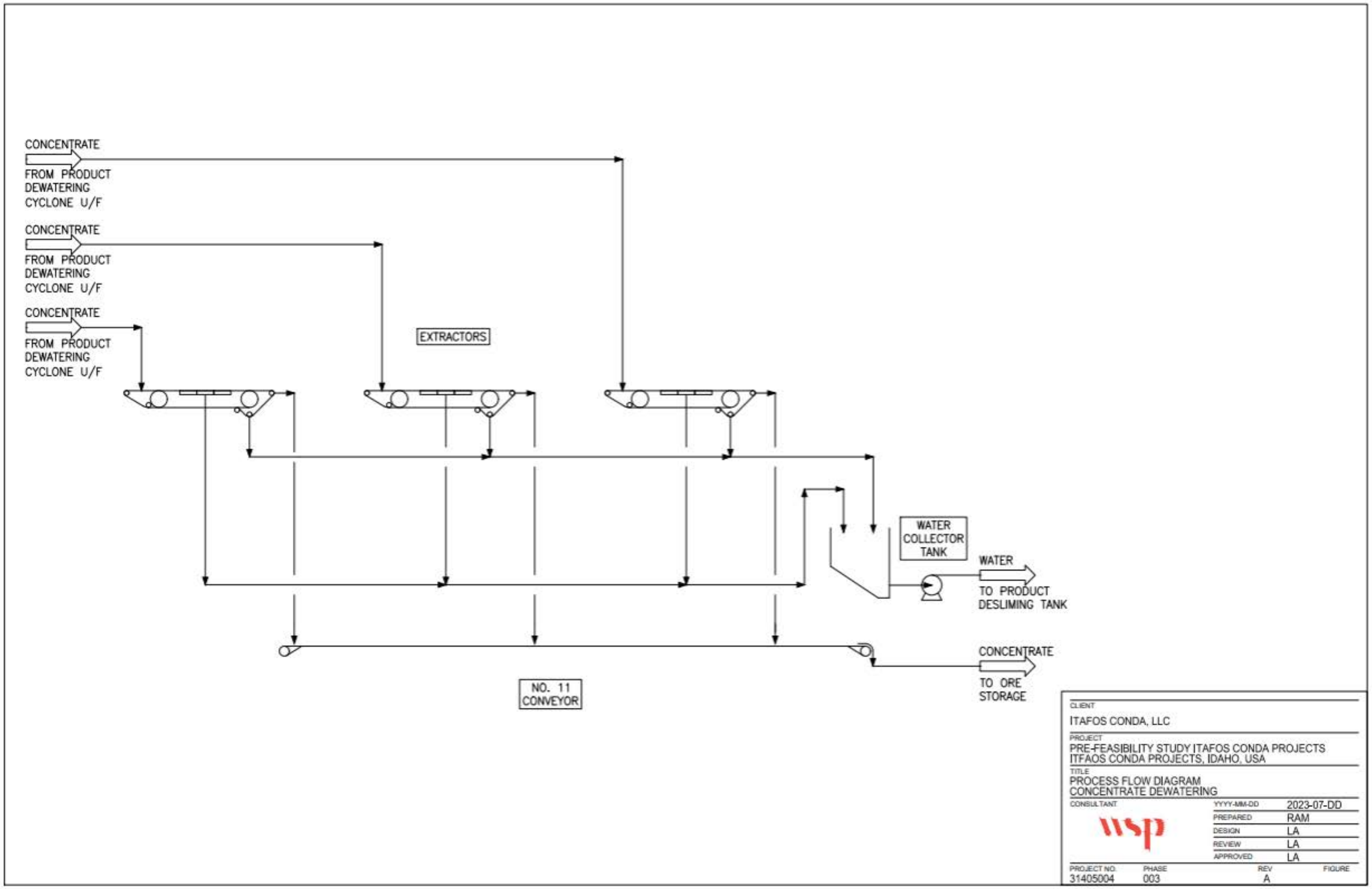


Figure 17.8: Conda Future Wash Plant - Concentrate Dewatering

17.5.5 Reagent Storage, Preparation, and Dosing

17.5.5.1 Phosphoric Acid

The flotation process requires two types of reagents: dilute phosphoric acid and a collector. The phosphoric acid storage and preparation circuit involves receiving clarified phosphoric acid into the PA storage tank, where it is diluted with well water to approximately 10% solution strength. When the PA use tank reaches a predetermined level, the contents of the PA storage tank are transferred using the PA storage tank transfer pump. Dilute phosphoric acid is then pumped to the flotation circuits using the PA use pumps.

17.5.5.2 Flotation Collector

Similarly, the collector storage and preparation circuit involves delivering the flotation collector to the collector storage tanks and then transferring it to the collector mix tank, where it is diluted with well water to 10% solution strength. When the collector use tank reaches a predetermined level, the contents of the collector mix tank are transferred using the collector mix tank transfer pump. Dilute collector is then pumped to the flotation circuits using the collector use pumps.

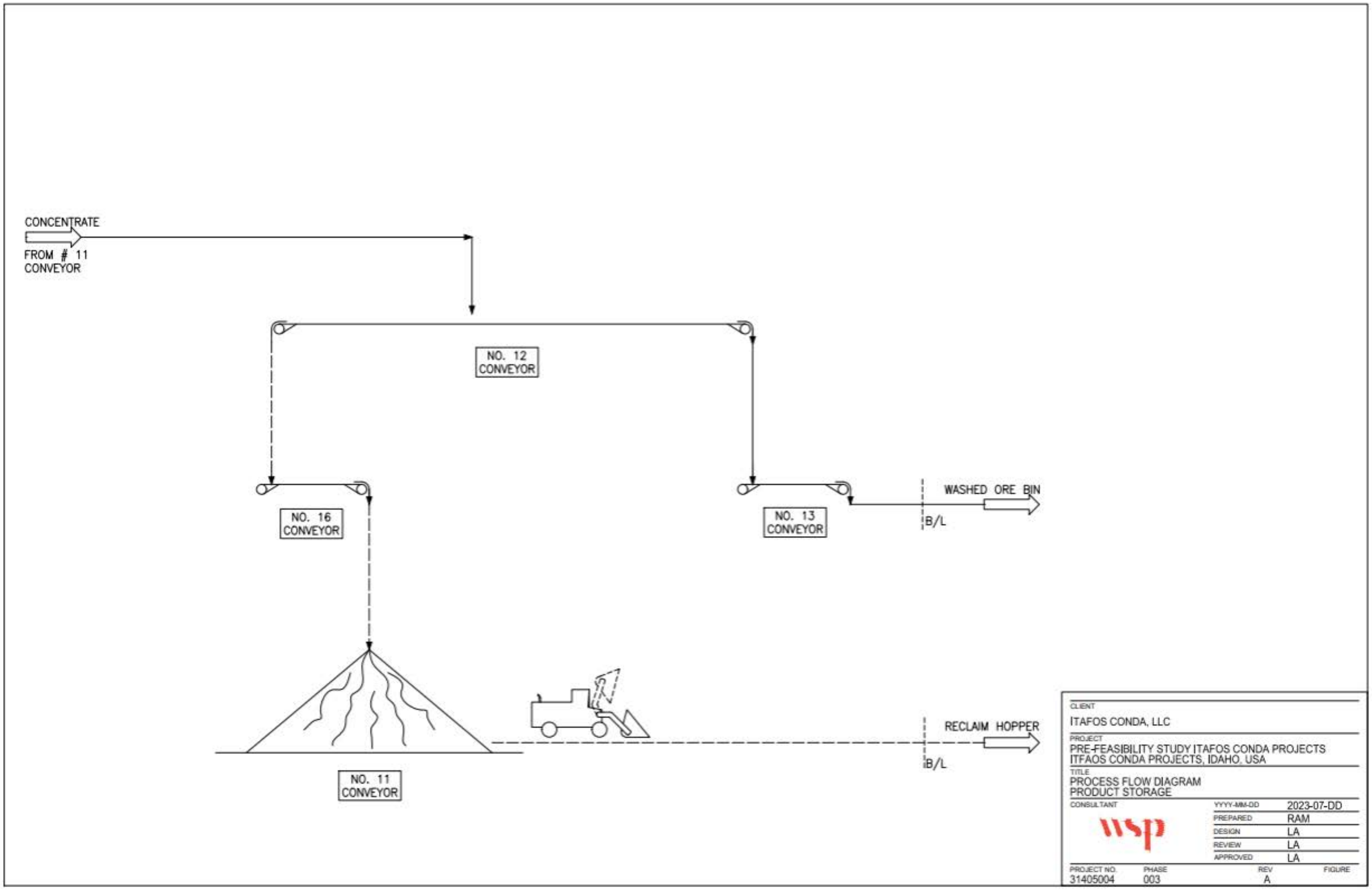


Figure 17.9: Conda Future Wash Plant – Reagent Storage, Preparation, and Dosing

17.5.6 Water Circuits

The process uses two types of water sources: reclaimed water from the tailings pond and well water. Well water is used for reagent dilution and in the flotation plants. Reclaim water is used throughout the plant where required.

17.5.6.1 Tailings Pond

Tailings slurry is pumped to the tailings pond, and decant water is recovered and returned to the process using the barge pump.

17.5.6.2 Flotation Process Water

Well water is provided by Conda and pumped directly into the flotation process water tank. Flotation process water is then pumped to the flotation plant and reagent preparation using the flotation process water pumps.

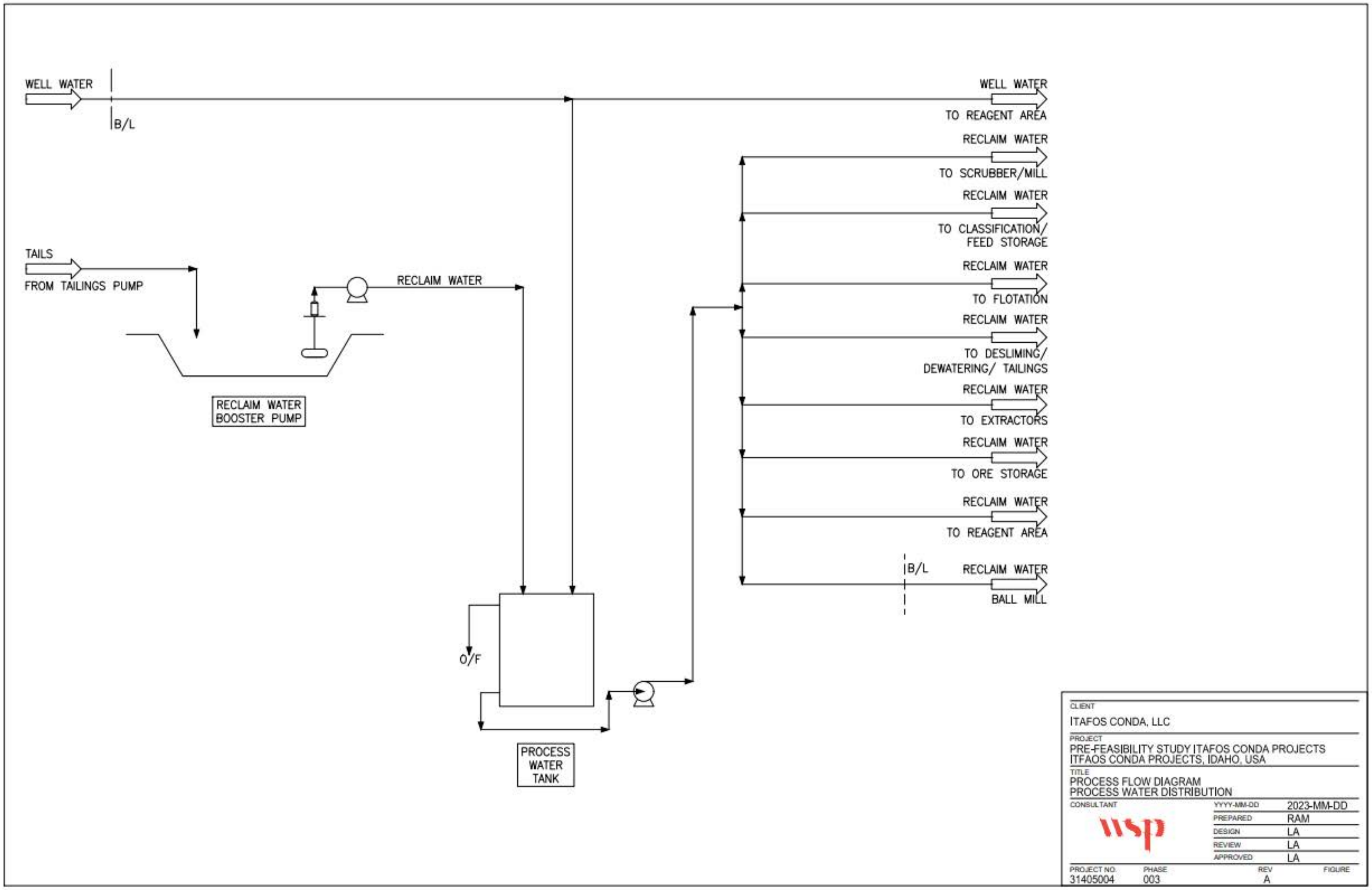


Figure 17.10: Conda Future Wash Plant - Process Water Circuit

17.5.7 Utilities

The total phosphate ore feed to the Modified Wash Plant is 375 tons per hour and the estimated total water usage for the process, with reclaim and well water is 5,300 gpm. Collector Consumption is 1.65 lb/ton of rock and Phos Acid conditioning consumption is 0.76 lb/ ton of rock. Finally, future installed power is approximately 6,400 kW.

17.5.7.1 Air

Existing and new air compressors are used to provide air, with the new dryer producing instrument air stored in the instrument air receiver. Compressed air is also stored in the plant air receiver.

17.5.7.2 Hydraulic Pump Station

A new hydraulic package unit will be installed to provide hydraulic fluid for operating hydraulic operated knife gate valves.

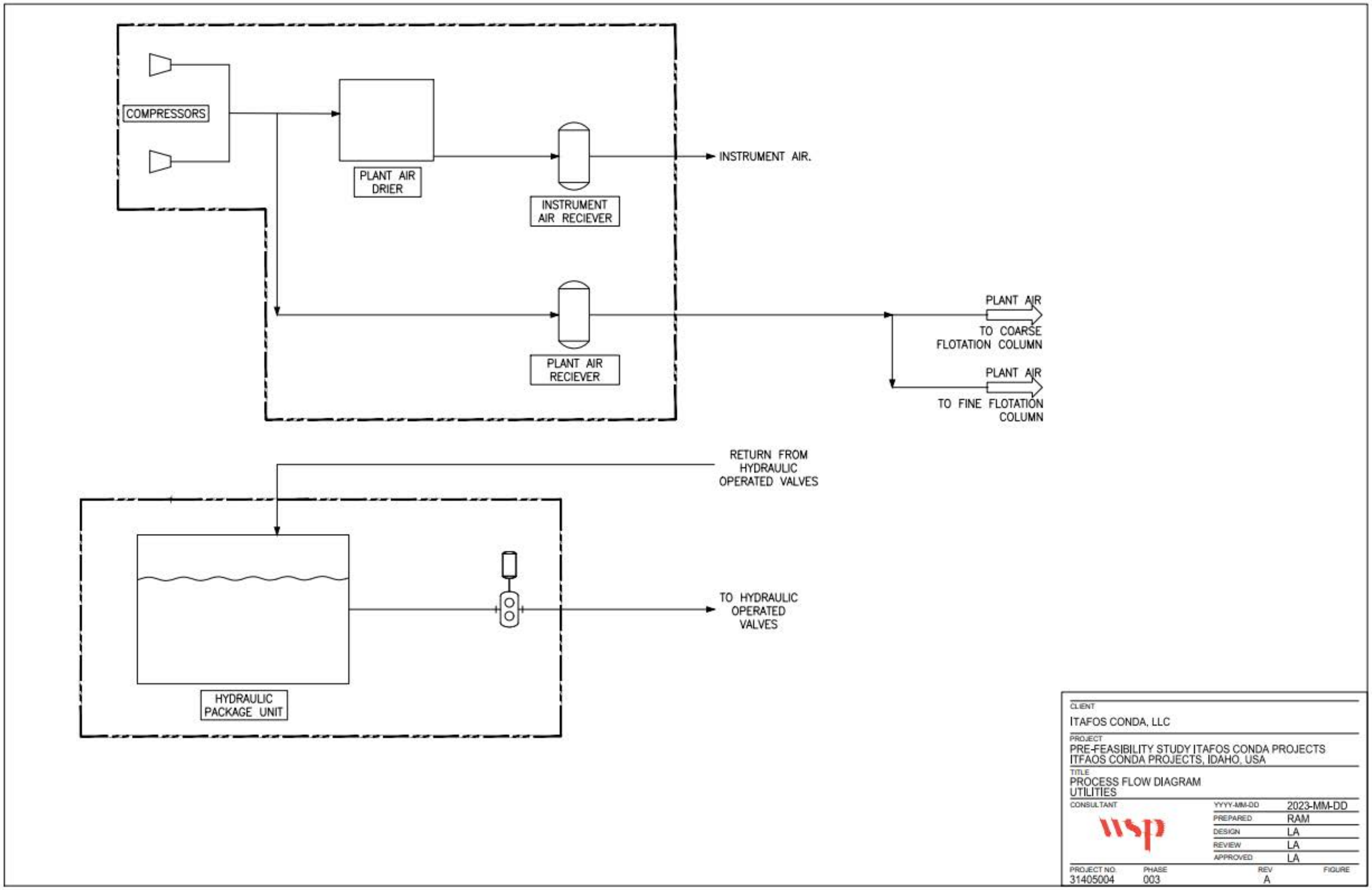


Figure 17.11: Conda Future Wash Plant – Utilities

18.0 PROJECT INFRASTRUCTURE

This Item contains forward-looking information related to locations and designs of facilities comprising infrastructure for the Conda project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: Project development plan and schedule, available routes and facilities sites with the characteristics described, facilities design criteria, access and approvals timing. This item provides a summary of infrastructure and logistic requirements for the RVM, H1SMC, and NDR projects. Infrastructure for the current operations is in place and adequate for the duration of mining. Key items of infrastructure are as follows.

Public site access is provided by State Highway 34 up to the WV Tipple and Ore Stockpile Area. Beyond the WV Tipple, a 14-mile-long purpose-built mine haul road connects the WV Tipple to the RVM and LCM operations. The WV Tipple is located 10.5 miles from RVM and 13.0 miles from the CPP. The Tipple is adjacent to a rail line that connects the mines to the CPP. The WV Tipple facility includes a forty-acre area for ore stockpiling and a reclaim and conveyor system with the capacity to load rail cars at a rate of 13 train cars per hour. Rail transportation is provided by UPRR via approximately 13.0 miles of track connecting the WV Tipple to the CPP ore stockpile.

Electric power is supplied to the WV Tipple from the local grid via an incoming 46-KV transmission line. Power for the RVM, and LCM sites is supplied by diesel generators. The RVM mine office/shop facilities are located on the main haul road between the WV Tipple and the RVM and include the following:

- Four equipment maintenance bays
- Preventative maintenance bay
- Welding Bay
- Ambulance Bay
- Lubricant storage room
- Mine office that includes a conference room, break room, locker rooms, shop office, and warehouse
- Analytical laboratory

In addition to these facilities, the fuel farm storage capacity in support of the RVM and LCM operations consists of approximately 40,000 gallons of diesel, 3,000 gallons gasoline, and 5,000 gallons of used oil. Barriers have been constructed under and around fuel tanks to meet applicable requirements for secondary containment of petroleum products.

Other constructed building and facilities include the following:

- Explosives storage for prill, emulsion, detonators, and caps sufficient to support the operation.
- Cinder storage shed
- Wash bay
- Mining contractor’s office

- Main survey base station
- Equipment parts storage area
- 1,800 square foot (ft^2) cement pad for changing haul truck tires
- Water stand

The RVM and LCM operations are connected to the CPP and outside services by telephone lines and fiber optic computer networking. All pits have two-way radio equipment, including repeaters and dedicated radio frequencies for communication between personnel and mobile equipment.

Currently in RVM, the topsoil layer is pre-stripped prior to mining and strategically placed around the perimeter of the pit for use in reclamation. Overburden from RVM is being placed into the mined-out phases of the RVM Pit. Periodically, a portion of the overburden will require temporary over-stacking both within and outside the pit limit. The over-stacked locations and quantities were identified by WSP as part of the mine plan.

Water management BMPs and sediment ponds are strategically located to control surface water from the RVM, LCM, and WV Tipple operations. These ponds are also used as a source of dust control water for the mining and tipple operations.

H1SMC and NDR are accessed from Soda Springs by taking State Highway 34 for approximately 11 miles, then turning east onto Blackfoot River Road and proceeding for approximately 10 miles, then veering right at Slug Creek Road for 0.04 miles and then proceeding southeast along the Dry Valley Road for approximately 6 miles to its junction with the Stewart Canyon Road/Caribou National Forest Road 134.

The Husky1 and North Dry Ridge (H1NDR) Tipple which will handle H1SMC and NDR ore is approximately 19.3 miles from the CPP via rail. The haulroad is approximately 4.5 miles in length from the southern end of NDR to the Tipple and approximately 2.6 miles in length from the northern end of H1SMC to the Tipple. There is an approximately 16-acre area for ore stockpiling and 1.4 miles of rail beyond the Tipple which can accommodate around 143 cars. Conda plans to load 133 cars per day at a rate of about 1,330 tons per hour.

H1NDR Tipple power supply will be similar to that of the WV Tipple, with 46-KV transmission line from the local power grid. The existing Dry Valley shop/office facilities will be used as the main base for H1SMC/NDR operations, to carry out major equipment repairs, to assemble and dismantle equipment, and for parts storage. The Dry Valley offices will also be used for production engineering, geology, maintenance, and management staff.

Dry Valley Shop Area fuel storage will be used as the fuel storage location for H1SMC/NDR. Fuel will be distributed from this site directly to equipment or by using fuel trucks. The total fuel storage capacity will be approximately 21,000 gallons of diesel, 3,000 gallons of gasoline, and 5,000 gallons of used oil at the Dry Valley Shop Area. Approximately 18,000 gallons of diesel will be located at the H1NDR Tipple laydown area. Both areas will be used to distribute fuel using either fuel trucks or direct filling of the equipment during a rotation in production or maintenance. Fuel will be stored in multiple aboveground double-walled storage tanks to increase monitoring proficiency and for easier maintenance of containment structures.

There are two large topsoil stockpiles planned to hold NDR topsoil and the topsoil for the north part of H1SMC. As mining advances south in H1SMC, smaller stockpiles around the perimeter of the pit will be used for topsoil storage. One temporary OSA will be placed near the southeast end of the H1 Lease. The temporary OSA is needed due to limited capacity of the H1 pit during mining for concurrent reclamation. All material placed in the temporary OSA will be rehandled and placed into the pit during final reclamation. Some of the overburden will be placed in SMCM and the rest will be placed in the H1SMC Pit. There are no external OSAs planned for NDR. The initial waste material from NDR will be placed in NMC, with the remainder being backfilled to the south as the pit advances to the north.

Figure 18.1 shows the locations of the key infrastructure described for the Conda Projects.

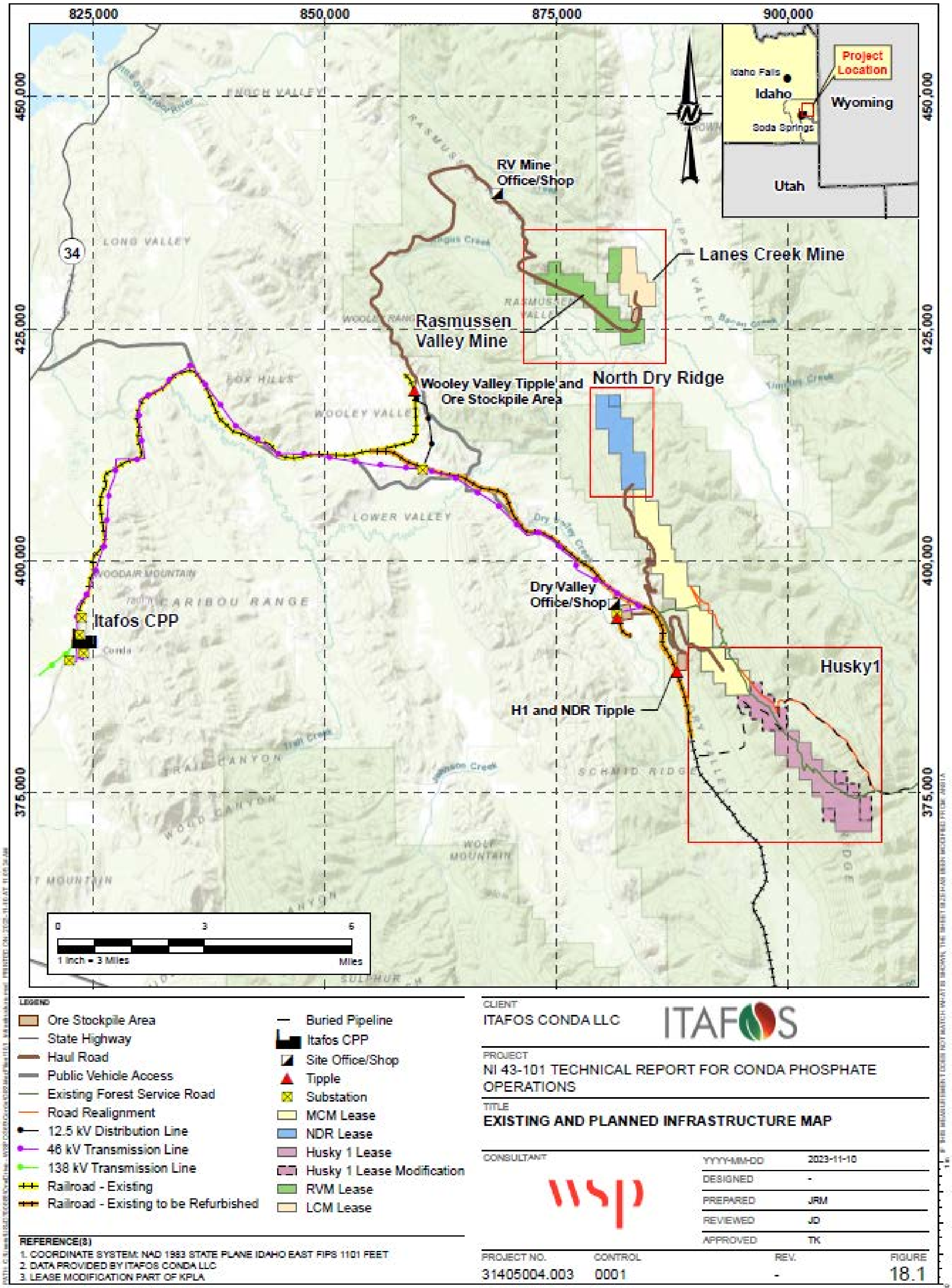


Figure 18.1: Existing and Planned Infrastructure Map

19.0 MARKET STUDIES AND CONTRACTS

This Item contains forward-looking information related to commodities demand and prices for the Conda project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: Prevailing economic conditions, commodities demand and prices are as forecast over the Study period.

19.1 CRU Market Study

A summary of reasonably available information is as follows concerning markets for Itafos' phosphate rock production. Itafos currently ships and plans to continue to ship all production from its mineral projects described in this report to the existing Itafos CPP near Soda Springs, Idaho. The mined phosphate ore will be beneficiated and processed into fertilizer products at the CPP.

All other phosphate ore produced in southeastern Idaho is similarly captive to vertically integrated fertilizer and phosphorous processing plants. For this reason, there are no transparent markets or commodity prices for southeastern Idaho phosphate rock. However, the Itafos CPP's demand and its ability to pay the cost of phosphate ore mined and transported from the Itafos mineral projects are dependent on the demand and prevailing commodity market prices for its fertilizer products, which consist of approximately 550 kt per year of specialty liquid and solid phosphates including monoammonium phosphate (MAP), superphosphoric acid (SPA), merchant grade phosphoric acid (MGA), and specialty products including ammonium polyphosphate (APP).

Itafos commissioned CRU Consulting, a division of CRU International Ltd. of London, UK to produce the Conda Phosphate Study (CRU Study) of the markets and forecast prices for the fertilizer products produced and shipped from the Itafos CPP. Due to its location in southeastern Idaho, the Itafos CPP serves North American fertilizer markets primarily west of the Mississippi River and in western Illinois. This market encompasses specialty agriculture growers of fruits, vegetables, and perennials of the western U.S., corn and soybean farmers of the American Midwest, and canola and wheat farmers of the Northern Plains of the U.S. and Canada.

SPA, MGA, and APP are sold to crop input retailers who re-sell to end users, Itafos is one of three key U.S. producers of SPA. All MAP production from the CPP is currently sold to Nutrien under a term sales contract that is due to expire in 2023. Itafos has entered into a new five-year MAP off-take agreement with JR Simplot Company beginning in January 2024[3]

The CRU study concludes that phosphate demand will grow slowly but steadily over the medium and long term, supporting demand for Itafos fertilizer products. Relevant excerpts from the CRU Study are as follows.

> "CRU's forecasts of increasing global consumption of agricultural production, both globally and in North America, establish a backdrop of price-supportive fundamentals for phosphate markets. This outlook for crop production translates to a P_2O_5 consumption forecast which is steadily increasing globally and mostly holding steady, with modest increases in North America.
>
> Out of all mature consumption regions, CRU considers that North America has the most upside. It will continue to be a key exporter of soybean, canola, and corn. Fertilizer efficiency per unit of agricultural

[3] https://itafos.com/news/2023/itafos-enters-into-monoammonium-phosphate-offtake-agreement/

production has improved significantly, but this has been in line with yield gains, meaning application rates have remained steady. P_2O_5 intensity of use, which measures the [kilogram] kg of nutrient per tonne of agricultural production is expected to fall in North America over the long term due to this trend in rising fertilizer efficiency.

Global demand for phosphates is expected to grow to 67.4 Mt P_2O_5 by 2045. This growth comes from gradual substitutions from nitrogen-based fertilizers to phosphates, due to changes in the global crop mix as well as policy shifts to balance the use of fertilizers in countries such as India. Long term demand is set to grow at the highest rates in developing regions including Africa, South America, Eastern Europe, Southeast Asia, and South Asia. Contrastingly, consumption growth in developed regions, namely in Eastern Asia, Western Europe, and North America are forecast to remain subdued."

Demand growth in the US is expected to hold steady with marginal year on year increases over the coming years. In 2022, the US was a net exporter of phosphate due to weakened domestic demand and strong international demand resulting from high Brazilian fertilizer prices. It is expected that the next few years will result in less export material as Brazilian prices fall and domestic demand for fertilizer increases. Much of the US production of fertilizer is located near the Gulf region and in the eastern states. This provides a logistical advantage for Conda operations to supply target markets such as the Pacific Northwest and Northern Plains

CRU's price forecast is based primarily on reductions in the capacity to supply North American markets.

In the CRU Study, North American fertilizer product price forecasts are in real 2022$ terms and are based on the following three fertilizer commodity bulk price benchmarks.

- DAP New Orleans, Louisiana (NOLA): The pricing basis is FOB barge New Orleans, Louisiana at the mouth of the Mississippi River from the US Gulf. Barges can be loaded from plants around the US Gulf and from oceangoing vessels discharging cargoes along the lower Mississippi River in Louisiana. DAP NOLA price indications assume that the barge shipment is loaded and begins delivery to customers at the river mouth. The main consumer markets are mostly US inland discharge points along the Mississippi River system.
- MAP Twin Cities: This FOB benchmark can be seen as a reference price for the Northern Plains. The pricing basis is FOB trucks/rail cars usually loaded from warehouses in the Minneapolis, St. Paul, Rosemont areas of Minnesota. Shipment sizes are 25-short ton trucks or 100-short ton rail cars.
- MAP Pacific Northwest: This benchmark represents a delivered price to distributors throughout Washington, Oregon, and the Idaho panhandle.

The CRU Study states, "CRU's DAP FOB NOLA price forecast serves as a driver for the MAP price forecasts for the Twin Cities and Pacific Northwest benchmarks. We have selected these regional MAP benchmarks based on their status as key, accessible markets for [Itafos'] MAP production, and based on those US DAP and MAP price references that CRU publishes. CRU projects long term US benchmark prices for DAP and MAP to increase in real terms, driven by rising long term demand and flat capacity growth."

CRU also forecast prices for Itafos' SPA product:

"[P]rice forecasts for SPA [are] based on the realized Itafos SPA price, which is defined by Itafos as SPA revenues, net divided by sales volumes. This represents a composite price of its sales of SPA in different markets. […] CRU and Itafos have mutually agreed for CRU to construct a price forecast for SPA based on market relationships provided specifically by Itafos. This established a historical average premium […] for delivered Western US SPA versus MAP NOLA.

CRU has derived a premium over the MAP NOLA price by linking our historical MAP NOLA prices (as reported by Fertilizer Week) to our base case forecast for DAP NOLA, and a gradual reversion to the historical premium by 2021."

The CRU Study also contains estimated transportation costs to deliver MAP from the Itafos CPP to the Twin Cities and Pacific Northwest markets and resulting net-back MAP prices at the CPP.

The CRU price forecasts are based on the following key assumptions:

"[O]ur MAP Twin Cities and MAP Pacific Northwest price forecasts are linked to the DAP NOLA price via assumed premium levels based on historical analysis and CRU's view of the market."

"CRU's medium-term forecasts are cyclical, driven by foreseeable developments in the supply/demand balance and short run marginal costs (e.g., the production costs of Chinese producers). Beyond five years into the future, there exists greater degree of uncertainty in cyclical forecasts which necessitates an alternative long-term approach for price guidance.

In the longer term, markets are assumed to be self-correcting. Periods of high prices encourage producers to invest in additional capacity. Periods of low prices cut investment in the supply-side and may encourage additional consumption. Therefore, over the long term, prices trend toward an average level that is set by the industry's fundamental supply characteristics.

Our main assumptions when assessing long-term pricing dynamics are threefold:

- Food consumption and economic growth will determine demand for fertilizers, while industrial productivity and technological development will provide the basis for non-agricultural demand.
- There is an implied supply gap based on our view of foreseeable capacity (existing supply and committed future supply) and the forecast of long-term demand.
- Supply will respond to this implied market scarcity and resulting price increases with new capacity investments, the operating and capital costs (Long Run Marginal Cost, or "LRMC") of which will provide the basis for the price trend over the long run."

Risk factors related to CRU's price forecasts are described in the CRU Study as follows.

"The following factors are not expected in our base case outlook but have the potential to move prices up or down, as detailed below.

Upside risk factors

- The war in Ukraine expands significantly, causing increased food security risks which drive crop prices higher. Increased tensions could result in additional sanctions, political-trade actions, and disrupted trade and/or supply.
- Brazilian phosphate rock mines experience prolonged production disruptions because of technical studies and actions and compliance with new regulations, for example in relation to new tailings dam regulations. Such delays would cause shortages of phosphate rock and MAP.

- CRU expects Ma'aden-III's first phase to commission in 2027 rather than the published 2025 target date. This delay will reduce global phosphate supply.
- Greater than expected increases in raw material prices and long-term cost drivers for production of phosphate fertilizer.

Downside risk factors

- The OCP Group exports more than expected, adding to the supply, and putting downward pressure on phosphate prices. OCP has been losing market share, and it may want to regain some of this share during a low-price environment.
- Indian phosphate fertilizer subsidies turn out to be lower than expected, reducing affordability, demand, and prices.
- Supply cuts Chinese DAP producers, which are factored into the base case, fail to materialize. Such a development could lead to surplus product in the Chinese and international markets, putting downward pressure on prices.
- In contrast to phosphoric acid, planned expansions to ammoniated phosphate capacity appear to significantly outpace projected DAP+MAP demand growth (when starting from 2021 as a base year). Consequently, we do not envisage global operating rates returning to the highs of 2021 or the mid-2010s over the medium term and presents a downside risk to our price forecast to 2027.
- The extent to which demand recovers from 2022 unaffordability will depend on the pace with which affordability improves, but we expect much of this recovery to occur in 2023. Nevertheless, there is a risk – based on historical trends – the demand response globally could take longer to materialize. Specific to MAP, Brazilian MAP import demand may be weaker than expected, which would reduce some of the upward price pressure expected in the base case view due to strength in the Brazilian market.

Uncertain Risk Factors with potential upside and downside implications over the long term

- Climate change and associated government policy
- Farming technology innovations and agricultural productivity
- Land and water resource constraints"

The CRU Study forecasts of DAP and MAP prices are reproduced on Table 19.1. The forecasts are in real 2022$ terms on a US$/metric tonne basis.

Table 19.1: Historical and Forecast Prices for DAP and MAP (Real 2022$ terms)

Description	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027
DAP NOLA	$/mt	372	374	690	845	592	481	468	485	495
MAP Twin Cities	$/mt	442	444	760	915	662	551	538	555	565
MAP Pacific Northwest	$/mt	482	484	800	955	702	591	578	595	605
Description	**Units**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
DAP NOLA	$/mt	511	526	541	554	566	578	588	598	600
MAP Twin Cities	$/mt	581	596	611	624	636	648	658	668	670
MAP Pacific Northwest	$/mt	621	636	651	664	676	688	698	708	710
Description	**Units**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**
DAP NOLA	$/mt	603	605	607	608	610	611	612	612	613
MAP Twin Cities	$/mt	673	675	677	678	680	681	682	682	683
MAP Pacific Northwest	$/mt	713	715	717	718	720	721	722	722	723

Source: CRU Study (CRU, 2023)

Fertilizer Product Costs and Margins

The CRU Study included estimated production costs for MAP and SPA in real 2022$ for the year 2022 and for 2026 to show forecast cost escalation in real terms. The CRU Study states that the fertilizer product cost estimates were based on the following information and assumptions:

> "The phosphate rock costs and phosphoric acid to SPA conversion costs are based on historical cost figures provided by Itafos and escalated by CRU.
>
> The ex-rock, or plant, costs for phosphoric acid and MAP have been modeled with the CRU Phosphate Cost Model with some inputs provided by Itafos including:
>
> - Beneficiated phosphate rock specifications
> - Phosphate rock reactor consumption factor
> - Labor rates and number of workers
> - Electrical power rates and consumption
> - Consumables
>
> These costs, shown in real 2022$ terms, indicate a forecast of modest real cost escalation […] driven by CRU projections for labor, power, and supplies increasing at a rate slightly above general inflation. Our forecast for a moderately greater rate of increase in plant costs is driven by expectations of higher escalation for ammonia and sulfuric acid prices.
>
> These cost estimates assume that phosphate rock mining and beneficiation, as well as the plant, continue to operate with the same steady-state processes and production levels from 2022 to 2026. However, by 2026 changes will likely impact the cost of mining, phosphate rock transport and beneficiation. At the time of writing, we understand such changes are still being studied by Itafos. As a result, they have not been factored into the 2026 cost estimates."

The CRU Study concludes that:

> "Conda's $498/t delivered cost to this [Pacific Northwest] region, given our estimated costs, Conda has scope for positive margins. […] We note that this delivered MAP cost […] does not detail the entirety of Conda's economics and competitive position. This is in part due to a substantial portion of Conda's profits being generated from sales of SPA […]."

The CRU Study also shows that based on the 2022 Itafos Realized SPA price of $1,817 /mt ($1,648 / st), Itafos earns a substantial margin on SPA sales. The Qualified person confirms that he has reviewed the CRU Study and analyses and that the results support the assumptions in the technical report.

19.2 Gross Margin Available for Mined Phosphate Ores

RVM is a captive feedstock supplier to the CPP, and there is no open commodities market in southeastern Idaho for mine phosphate ores. H1SMC and NDR will also be captive feedstock suppliers to the CPP. Therefore, for estimating the RVM, H1SMC, and NDR mineral reserves disclosed in this report, in lieu of transparent mined phosphate ore commodity market prices, WSP estimated the Gross Margins Available at the CPP to pay for mined phosphate ores FOB railcar at the tipple (GMAs) over the Study period.

The GMAs were estimated per dry ton of P_2O_5 required by the CPP and contained in the ore mined and loaded at the Tipple. The estimated GMAs are the maximum average annual transfer prices that the CPP could pay for mined ores from the projects and breakeven on a cash basis. GMAs are the forecast fertilizer product revenues minus all CPP cash costs associated with the chemical plant, ore washing, and rail transport from RVM, H1SMC, and NDR to the CPP. From the viewpoint of Itafos and the CPP, the estimated annual GMAs are economic limits on mining.

To estimate the GMAs, the CRU prices were first converted from $/mt to $/st. The DAP and MAP price forecasts from the CRU Study for the 2019-2045 period are shown in $/st in Figure 19.1.

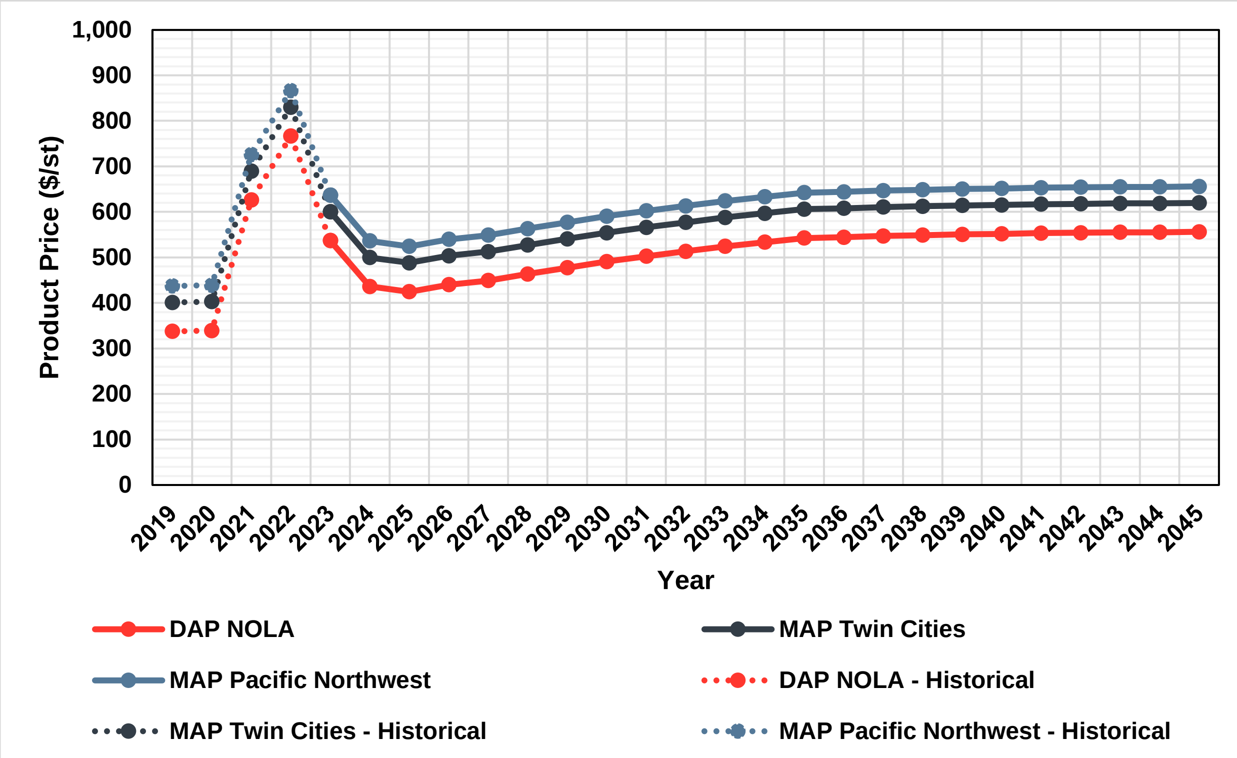


Figure 19.1: Historical and Forecast DAP and MAP Prices for 2019-2045 ($/short ton, real 2022$ terms)

For the Gross Margin Analysis, the QP used the average of the MAP prices from the Pacific Northwest and Twin Cities markets shown in the CRU Study, see Figure 19.1 and Table 19.1. This assumption was based on Itafos' direction that after the current MAP off-take agreement expires in 2023, MAP would be sold in the open market through Itafos' network of buyers. Subsequent to the CRU analysis which was used in the GMA calculation and economic analysis, Conda entered into a new 5-year MAP off-take agreement with JR Simplot Company that will take effect January 1, 2024 for sales of their MAP product.

Itafos also provided the MAP and SPA annual production tonnages and the CPP's annual P_2O_5 requirement that remained constant over the Study period. The annual P_2O_5 requirement was also used to drive the production plans described in Item 16.0. Itafos also provided the actual cost for processes downstream of the tipple including beneficiation, chemical plant costs, and shipping costs. CRU expects plant costs to increase at a rate slightly higher than general inflation due to higher escalation rates for sulfuric acid and ammonia used in the manufacture of the fertilizer products.

The estimated annual CPP downstream costs were subtracted from the forecast revenues from MAP and SPA sales to determine the GMAs for phosphate ores from H1SMC, and NDR. Table 19.2 shows the details of the QP's GMAs analysis for 2023 and 2026. The GMA for RVM ore was discussed in the 2019 Conda TR[4], Item 19. The QP has reviewed the pricing and cost information and determined that the previously stated RVM reserves have not been materially affected by changing costs and prices since the 2019 TR.

[4] NI 43-101 Technical Report on Itafos Conda and Paris Hills Mineral Projects, Idaho, USA. For Itafos. 12/13/2019.

Table 19.2: Estimated Gross Margins Available for H1SMC and NDR Ore in 2023 (real 2022$ terms)

Item	Units	Value
MAP Tons Produced	000s st	327
NPS Tons Produced	000s st	62
SPA P_2O_5 Tons Produced	000s st	186
Average MAP Price	$/st	550
Average NPS Price	$/st	537
SPA Price Forecast[1] (per st of product P_2O_5)	$/st	1,210
Total Forecast Fertilizer Product Revenue	**$ million**	**438**
CPP Downstream Costs[2]	$ million	303
Gross Margin Available for Phosphate Ore	**$ million**	**135**
Total P_2O_5 Requirement from Mines	000s st	386
Gross Margin Available per Ton of P_2O_5	**$/st**	**351**

1. SPA is sold based on phosphate content in the product tons. For this analysis, the grade was assumed at 70% P_2O_5.
2. CPP Downstream costs include Shipping, Beneficiation, and Chemical Plant Costs.

As shown on Table 19.2, there are substantial estimated GMAs to cover costs of mined phosphate ores per ton of P_2O_5 required in 2023. The GMAs are forecast to decrease in real 2022$ terms due to forecast fertilizer prices that grow more slowly than expected real escalation related to all non-mining costs of fertilizer production.

19.3 Material Contracts

Contracts that are material to the issuer and required for project development are as follows: mining, concentrating, smelting, refining, transportation, handling, sales and hedging, and forward sales contracts or arrangements.

Itafos has a mining contract with Kiewit Mining Group of Denver, Colorado (KMG). KMG currently conducts all mining operations at RVM including waste and ore mining and haulage and all ancillary activities. KMG provides all equipment, labor, supervision, general and support required for the mines. The current contract expires when mining ceases in RVM. Conda is currently in negotiations on the H1SMC and NDR mining contract.

Itafos has a contract for rail transportation with the Union Pacific Railroad. The terms of the contract are confidential.

Itafos sells 100% of its MAP production to Nutrien under an offtake agreement with pricing tied to an industry benchmark. The offtake agreement is due to expire in 2023. Itafos has entered into a new five-year off-take agreement with JR Simplot beginning in January 2024[5]. Itafos uses a portion of its CPP SPA production to produce 10-34-0 at four third-party locations. The 10-34-0 produced in contracted and sold as it becomes available. The remaining SPA production is contracted and sold to customers on annual term contracts.

[5] https://itafos.com/news/2023/itafos-enters-into-monoammonium-phosphate-offtake-agreement/

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This Item contains forward-looking information related to applications, permits, approvals and consents required and time to approvals for the Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: Regulatory framework is unchanged for Study period; no unforeseen environmental, social or community events disrupt timely approvals.

This Item presents the available material information on environmental, permitting, and social or community factors related to the Conda projects.

20.1 Environmental Studies

For each project, a summary is provided of the results of any environmental studies and a discussion of any known environmental issues that could materially impact Itafos' ability to extract the mineral resources or mineral reserves.

20.1.1 Rasmussen Valley Mine (RVM)

Minerals at RVM are a federal mineral estate leased by Itafos. As such, environmental impacts associated with mining the deposit were analyzed under the National Environmental Policy Act (NEPA). An Environmental Impact Study (EIS, also known as Environmental Impact Statement) was jointly conducted by the BLM and the USFS with the participation of other various federal and state agencies. In September 2016, the BLM and USFS issued the Final EIS for the Rasmussen Valley Mine

The EIS evaluated the following natural resources with respect to anticipated impacts associated with mining the Rasmussen Valley deposit.

- Surface Water
- Groundwater
- Geology and Minerals
- Paleontology
- Air
- Climate
- Noise
- Hazardous Materials and Solid Waste
- Soils
- Vegetation
- Wetlands and Riparian Areas
- Terrestrial Wildlife
- Fisheries and Aquatic Species
- Threatened, Endangered, or Sensitive Species
- Cultural

In addition to evaluating these natural resources, the EIS also evaluated other social impact issues including:

- Land Use Plan Compliance
- Grazing
- Traffic
- Recreation
- Tribal Treaty Rights and Interest
- Social and Economic impacts
- Public Health and Safety
- Social Justice

The EIS concluded that the submitted Rasmussen Valley mine selected alternative would not create unavoidable environmental impacts.

The issue of mobilization of selenium is a well-documented and understood phenomenon in the southeast Idaho phosphate patch. The issue centers around historical mining practices that allowed for the mobilization of selenium from mine waste into the environment, most notably into groundwater and surface water. Modern mining practices implement improved Best Management Practices (BMPs) that mitigate these known potential impacts. These BMPs consist of two primary actions. The first is to eliminate permanent external pit storage of selenium bearing waste. The second is to utilize pit backfill cover systems that reduce infiltration of water through ROM waste. Both of these BMPs have been utilized on RVM. There are no permanent (or temporary) external storage of selenium bearing waste as well as a robust cover system for the mine backfill that significantly limits infiltration of meteoric water. In January 2017, the BLM and the USFS issued individual RODs recommending that the BLM and USFS issue the necessary permits to commence mining. In February 2017, an Appeal was filed and was reviewed at the US Department of Interior Board of Land Appeals (IBLA). Following its review, the IBLA affirmed BLM's decision to issue the ROD. In May 2017, the BLM issued a Notice to Proceed. Additionally, the Idaho Department of Lands (IDL) and the Idaho Department of Environmental Quality (IDEQ) utilized the analysis conducted in the EIS to support decisions on various other permits and authorizations necessary to commence mining.

Since May 2017, mining has proceeded at the RVM. Mining will continue for the next few years at which time the mine will be reclaimed in accordance with approved mine closure terms and conditions, including but not limited to: pit backfill cap and cover systems, environmental management plans and protocols (e.g., inspection, monitoring and maintenance of surface water, groundwater, vegetation, pit backfill and overburden cover construction and reclamation success criteria) and established points of compliance.

20.1.2 Lanes Creek Mine (LCM)

In February 2004, IDEQ published a report titled "Area Wide Risk Management Plan (RMP): Removal Action Goals and Objectives, and Action Levels for Addressing Releases and Impacts from Historic Phosphate Mining Operations in Southeast Idaho" (Idaho Department of Environmental Quality (DEQ), 2004). Within this report, the LCM was listed as a "non-time critical removal action" site [as defined by the CERCLA]. At the time of the 2004 Report, the LCM was an inactive historical mine controlled by J. R. Simplot Company (Simplot).

In July of 2008, the IDEQ published the "Lanes Creek Mine Preliminary Assessment (PA) Report" (Idaho Department of Environmental Quality (DEQ), 2008). In general, the report found that due to historical mining at the facility there was an environmental risk of selenium entering surface water and groundwater at levels above the then current water quality standards (Note: the water quality standards for surface water have become more stringent since the report was published).

Additionally, the report found that detrimentally high selenium exposure levels potentially existed for both wildlife and livestock. Potential human exposure was determined to be moderate. The primary sources of these environmental impacts included the open pit, an external overburden pile, and abandoned surface water features. The report recommended an early remedial action for the LCM.

In 2009, Agrium approached Simplot regarding the acquisition of LCM. At that time, Agrium began extensive environmental investigations of the site including studies of:

- Surface Water
- Groundwater
- Geology and Minerals
- Air
- Soils
- Vegetation
- Wetlands and Riparian Areas
- Terrestrial Wildlife
- Fisheries and Aquatic Species
- Threatened, Endangered, or Sensitive Species

The results of these studies generally concurred with the 2008 IDEQ PA Report findings.

In 2015, a Mine and Reclamation Plan (MRP) was developed and submitted to remediate the site through mining. Agency approval to mine was subsequently granted, mine operations commenced, and have now been completed.

The three primary sources of environmental impact; various external water management features, the pit, and south external overburden stockpile, would be remediated while the remainder of the economic ore deposit at LCM was mined. Various water features were removed and replaced with lined ponds. The remainder of the pit was expanded during mining with overburden being temporarily stored external to the pit. Finally, the temporary external overburden piles would be fully re-handled into the pit as backfill.

Mining of ore at the LCM concluded in July 2020. Pit backfill and reclamation work continues in accordance with subsequent mine operating and reclamation plan amendment approvals. The LCM will be reclaimed in accordance with conditions of these approvals, including but not limited to: mutual reclamation of the LCM and the RVM, pit backfill cap and cover systems, environmental management plans and protocols (e.g., inspection, monitoring and maintenance of surface water, groundwater, vegetation, pit backfill and overburden cover construction and reclamation success criteria) and established points of compliance.

20.1.3 Husky1 and North Dry Ridge (H1SMC and NDR)

Minerals at H1SMC and NDR are a predominantly federal mineral estates with minor amounts (40 acres) of state mineral estates leased by Itafos. As such, environmental impacts associated with mining the deposits must be analyzed under National Environmental Policy Act (NEPA). An EIS has been jointly conducted by the BLM and the USFS with the participation of other various federal and state agencies.

Like the RV Mine, the EIS evaluated the following natural resources with respect to anticipated impacts associated with mining the H1NDR deposit.

- Surface Water
- Groundwater
- Geology and Minerals
- Paleontology
- Air
- Climate
- Noise
- Hazardous Materials and Solid Waste
- Soils
- Vegetation
- Wetlands and Riparian Areas
- Terrestrial Wildlife
- Fisheries and Aquatic Species
- Threatened, Endangered, or Sensitive Species
- Cultural

In addition to evaluating these natural resources, the EIS also evaluated other social impact issues including:

- Land Use Plan Compliance
- Grazing
- Traffic
- Recreation
- Tribal Treaty Rights and Interest
- Social Justice
- Social and Economic impacts
- Public Health and Safety

The EIS concluded that the H1NDR mine selected alternative would not create unavoidable environmental impacts.

On April 20, 2023, and April 21, 2023, respectively, the BLM and USFS released their ROD approving the H1NDR MRP. The BLM decision approves the on-lease portions of the Mine and Reclamation Plan, as modified by the selected alternative, and recommends approval of the proposed project. The USFS decision selects an alternative that best provides for public access and approves a slurry pipeline corridor relocation as well as special use authorizations for off-lease mine facilities.

The H1NDR proposed action consists of mining phosphate ore by utilizing an open pit surface mine method. Proposed mining and mining related activities would occur within BLM-administered mineral leases (I-05549, I-8289, I-04 and I-0678) located in Caribou County, Idaho, within the Caribou-Targhee National Forest. Proposed mining activities would affect approximately 1,146 acres. Except for haul road corridors on outlying private land, all affected areas would be on National Forest System lands. The project would be active for approximately 15 years and ore recovery would take place during a period of about 13 years.

As part of the mine approval process, Itafos completed a Habitat Equivalency Analysis (HEA) for the Selected Alternative. The objective of the HEA was to quantify long term impacts to wildlife habitat. A compensatory mitigation plan was developed. As a result of the plan, In June 2023, Itafos provided a compensatory mitigation payment to a third-party organization. The funding will be used for the benefit of wildlife habitat in southeastern Idaho.

20.2 Overburden Disposal, Tailings Disposal, Water Management, and Site Monitoring

The requirements and plans at each project are as follows for: i) overburden disposal, ii) tailings disposal, and iii) site monitoring and water management both during operations and post mine closure.

20.2.1 Overburden Disposal

At all Conda projects, overburden is removed to uncover the phosphate ore beds for mining.

20.2.1.1 Rasmussen Valley Mine (RVM)

Upon a Notice to Proceed from the BLM, mining commenced at the RVM in the latter half of 2017 and continues to present day. Overburden at RVM is segregated into three categories: Growth Media (GM), Selenium Overburden (SOVB), and Non-Selenium Overburden (N-SOVB). During the initial phases of mining, all GM is stored in external piles for eventual re-handle as reclamation needs require. All SOVB was placed directly into the existing South Rasmussen Mine (SRM) final phase open pit. SRM (both State and Federal leases) is controlled by P4 Production LLC which is a wholly owned subsidiary of Bayer. N-SOVB has been either utilized to build necessary facilities, such as the haul road, or placed directly into the existing South Rasmussen Mine final phase open pit.

As mining progressed and pit space within the RVM became available for backfill, direct placement of overburden as pit backfill began. Both SOVB and N-SOVB has been placed in previously mined phases. Backfilling with overburden continues in this fashion for the duration of mining activities in the open pit. This process is termed ‘concurrent reclamation.’

During mining, concurrent reclamation will not always be possible as the various phases are of different volumes. At times there is an excess of overburden with no backfill availability. In this case, the excess overburden will be placed on previously backfilled areas. This will create "'over filled" areas within the mine backfill. At the end of mining, these overfilled areas will be re-handled and placed as backfill into the final phase of the RVM. This process will leave no final open pit at the end of mining.

In addition, in March 2020, a Backfill Swap was approved to allow overburden material from the RVM to be placed in the LCM and overburden material from the LCM would be placed in the RVM. The timing and phasing of the swapped overburden material allowed for a cost effective and efficient way of managing these materials.

The RVM provides a store-and-release cover for all backfill at the RVM to provide additional protection of water quality resulting from any deep percolation of precipitation into and through the backfill. The store-and-release cover consists of three layers; a bottom layer of three (3) feet of alluvium (poorly suited GM material), a middle layer of two (2) feet of clay material from external borrow sites, and a top layer of one (1) foot of GM. The material for the bottom layer can be supplement with limestone sourced from the Wells Formation. The material for the middle layer is a high storage/low permeability material that will be sourced or borrowed from areas contiguous with the mine. The entire mine will be seeded with a mix that includes species suited to the various aspects and elevations found at the Rasmussen Valley Mine.

20.2.1.2 Lanes Creek Mine (LCM)

Location, surface features, and land ownership greatly constrained the design of the LCM. The LCM is designed as a three-phase mine from south to north with no opportunity for concurrent reclamation. Therefore, three piles external to the pit are designed to temporarily store overburden during mining.

The northern pile is designed for N-SOVB, the eastern pile is designed for GM, and the southern pile is designed for SOVB. The southern Selenium Overburden stockpile is built on top of an historic external overburden pile noted in the "Lanes Creek Mine Preliminary Assessment Report" (Idaho Department of Environmental Quality (IDEQ), 2008). This historical pile is the source of most of the selenium related impacts associated with the LCM.

Overburden disposal will consist of complete re-handle of all three piles with material placed into the open pit as backfill post mining. Backfill operation will be followed by construction of an approved earthen cap and cover over the entire backfill. The requirements for the LCM cap are a minimum of 10 feet of low-Se overburden placed on the uppermost portion of the pit backfill in two 5-foot lifts. N-SOVB overburden cover material will be overlain by a cap comprising a minimum thickness of 3 feet of suitable (N-SOVB) Growth Media.

In the end, the removal and placement of the historic external pile material as backfill addresses the environmental impacts associated with the historical mining of the LCM site.

20.2.1.3 Husky1/South Maybe Canyon and North Dry Ridge (H1SMC/NDR)

Overburden at H1SMC and NDR will be segregated into three categories: GM, SOVB, and N-SOVB.

The current MRP proposes that during the initial phases of mining, all GM will be stored in external overburden piles for eventual re-handle as reclamation needs require. All SOVB will be placed directly into the existing Maybe Mine open pits. N-SOVB will be either utilized to build necessary facilities, such as the haul road, or placed directly into the existing Maybe Mine open pit.

Based on conclusions of the Remedial Investigation (RI) and Risk Assessments (human health, ecological and livestock), conducted under CERCLA in association with the historic Maybe Mine Lease owned by Nutrien, it is the USFS's judgement (in July 2023), that the open pits within the NMM Open Pit Sub Operable Unit (OPSOU) and the South Maybe Canyon Mine (SMCM) Open Pit Operable Unit (OPOU) do not require remedial action to prevent, mitigate, or respond to prior mine contamination. Therefore, in July 2023, the USFS recommended a Plan of No Action for NMM OPSOU and SMCM OPOU. A public review and comment period of the recommendations was concluded in mid-August 2023. In the succeeding weeks, the USFS will respond to the public comments received. Then as early as the Fall of 2023, it is anticipated that two separate Record of Decisions (RODs) will be prepared, one for the NMM OPSOU and another for the SMCM OPOU. These RODs are necessary to open up the ability to eventually place overburden material from H1 and NDR into the open pits at NMM and SMCM, respectively.

As mining progresses and pit space within the H1SMC and NDR becomes available for backfill as direct placement of overburden as pit backfill begin. Both SOVB and N-SOVB within the current phases will be placed in previously mined phases. Backfilling with overburden will continue in this fashion for the duration of mining activities in the open pit. This process is termed ‘concurrent reclamation.’

During mining, concurrent reclamation may not always be possible as the various phases are different volumes. At times, there may be an excess of overburden with no backfill space available. At these times the excess overburden may be placed on previous backfill or temporary external storage piles. Excess overburden placed on previously backfilled phases would create an “over filled” area within the mine backfill. At the end of mining these overfilled areas and temporary external storage piles will be re-handled and placed as backfill into the final phase of the H1SMC and NDR mine. This process would leave no final open pit areas at the end of mining.

The H1SMC and NDR 2020 MRP proposed a store-and-release cover for all overburden at the H1SMC and NDR site to provide additional protection of water quality resulting from any deep percolation of precipitation into and through the overburden. A cap and cover alternatives analysis was evaluated during the EIS. The agency selected alternative was a combination between the store and release cover and other engineered covers that limit groundwater infiltration. The entire mine will be proposed to be seeded with a mix that includes species that are suited to the various aspects and elevations found at the H1SMC and NDR site.

20.2.2 Tailings Disposal

There is no tailings disposal at any site. All phosphate ore is shipped or planned to be shipped by rail to the CPP. All tailings disposal from ore processing is at the CPP site, see Item 24 for additional information on the CPP.

20.2.3 Water Management

At each site, water is, or planned to be, segregated into ‘contact’ and ‘non-contact’ water. Contact water is defined as any water that has potentially contacted SOVB material. Contact water is managed under the SWPPP for zero release. The water that is collected as contact water is disposed of by evaporation and/or used as dust suppression within the containment area. As an example, all water that contacts the haul road is considered contact water. This water is then collected into lined ponds. This water can then evaporate from the ponds or be utilized for dust suppression on the haul roads where it will either evaporate or flow back to the lined ponds.

Non-contact water is or will be collected in various unlined ponds and allowed to infiltrate or be released once applicable water quality standards are met. The primary water quality criteria that are managed with non-contact water are turbidity and total suspended solids (TSS).

20.2.4 Site Monitoring

All sites operate or will operate under site-specific Environmental Monitoring Plans (EMP). These plans cover monitoring requirements, procedures, and reporting for: surface water, groundwater, vegetation and soils. The EMPs for RVM and LCM have been approved by all applicable federal and state agencies. Results of monitoring efforts are reported annually. For H1SMC and NDR, Itafos will develop and submit an EMP for approval by applicable federal and state agencies prior to commencing mining at these sites. For each project, post closure monitoring plans will be developed and submitted for approval to relevant agencies as mining at each location nears end of life.

20.2.5 Status of Project Permitting Requirements and Applications

For each project, permitting requirements, the status of any permit applications, and any known requirements to post performance or reclamation bonds are as follows.

20.2.5.1 Rasmussen Valley Mine (RVM) and Lanes Creek Mine (LCM)

RVM and LCM are fully permitted and approved for operations. There are no outstanding permits or applications. It should be noted that for the RMV, USACE determined that a Section 404 CWA permit is not required as no jurisdictional wetlands or surface waters are impacted.

20.2.5.2 Husky1 and North Dry Ridge (H1NDR)

RODs were issued for H1NDR in April 2023 by both the BLM and USFS. The BLM and USFS recommended the issuance of the necessary permits to commence mine development and eventual mining per the NEPA determined "Preferred Alternative." The Preferred Alternative was developed through the NEPA process and is essentially the MRP but with an improved cover system, public access around the site, and realignment of a stream. Additionally, the United States Army Corps of Engineers (USACE), the Idaho Department of Lands (IDL), and the IDEQ are utilizing the analysis conducted in the EIS to support decisions on various other permits and authorizations necessary to commence mining in the coming months. A list of permits necessary at H1SMC and NDR is as follows:

- BLM: Lease Modification Approvals
- USFS: Special Use Permit(s)
- USACE: 404 Permit and Stream Alteration Permit
- IDEQ: 401 Permit, Permit to Construct (Air Permit), SWPPP, and Points of Compliance (POC).
- IDL: Mine Reclamation Approval
- Caribou County: Conditional Use Permit, if so required.

It is anticipated that all permits will be issued by the end of 2023. The exception is the USACE 404 Permit.

The 404 Permit is required for operations that will be conducted on the southern portion of the H1SMC mine area. The 404 Permit will relate to the alterations to Stewart Creek that are necessary to access the ore. It will be approximately eight years after the commencement of mining at H1SMC/NDR that these impacts will be realized. Where the issuance of a 404 Permit has a limited time period to initiate the project, Itafos will submit an application to the USACE at the appropriate time. All necessary information was collected and analyzed in the EIS to facilitate the issuance of a NEPA ROD by the USACE at that time.

20.2.6 Reclamation Bonds

Reclamation bonds are required by BLM, USFS, and IDL as assurance to cover the estimated costs of mine reclamation and closure. Bond amounts are based on reclamation plans and cost estimates that are reviewed and revised periodically with bonding requirements adjusted appropriately. Financial assurances required for post closure long-term monitoring and maintenance costs are also estimated and incorporated into bond amounts. Approvals are required from both Federal and State regulatory agencies for amendments to reclamation, closure plan amendments and bond adjustments.

Itafos maintains surety bonds for all current bonding requirements associated with mining. Currently, reclamation bonds are posted in the total amounts of $54.0 Million for RVM and $9.1 Million for LCM. The bond amounts will be adjusted as reclamation is completed and the mines are closed.

Reclamation bonds will be required at H1SMC and NDR. A bond of $3.4 million was posted in May of 2023 to cover the initial phase of infrastructure. The bond amount will be adjusted prior to the commencement of mining.

20.2.7 Potential Social or Community Related Matters

The following discusses any potential social or community related requirements and plans for the projects and the status of any negotiations or agreements with local communities.

20.2.7.1 Conda Projects

There are no known social or community related requirements associated with any of the Conda operating mines and planned projects. There are no ongoing negotiations or agreements with local communities.

Itafos actively supports and develops partnerships with stakeholder groups (governments, development agencies, non-profit entities, local community, and its citizens) who display their own commitment toward sustainability. The partnerships may be formal agreements or more informal relationships, but in general serve the purpose of maintaining close ties with local communities and open communications regarding potential issues that may arise related to Itafos' active operations, development, or exploration projects. Expenses associated with the partnerships are primarily in the form of employee time and associated expenses of meetings, sponsored events and donations to local activities and charities. The costs related to the partnerships are typically in the range of $50,000 to $100,000 annually.

20.2.8 Reclamation and Asset Retirement Obligation Requirements

Final reclamation and closure of any active mine is required for both federally permitted and state permitted mines. Mine closure (i.e., reclamation) is analyzed through NEPA and is a required part of a submitted MRP (43 CFR 3592). The State of Idaho also requires approval of mine reclamation plans (IDAPA 20.03.02.69 & 70).

20.2.8.1 Rasmussen Valley Mine (RVM)

During operations, direct placement of overburden as pit backfill (concurrent reclamation) reduces the volume of material requiring re-handle post mining. Direct placement of overburden is not always possible as the volume of overburden and available volumes of open pit space are not always fully synchronized. As such the RVM will create overfill piles that will be placed on backfill during mining.

Additionally, the process of concurrent reclamation leaves open pit space at the end of mining.

Post mining closure will include the re-handling of these overfill piles into the final phases of the mine, so little to no open pit remains. All facilities will be removed from the site. All earthen features, haul roads, equipment ready lines, and water management features, will be removed and collected material placed in the pit as backfill. The approved cap and cover will be built on all areas that did not receive the cap and cover during mining.

Post mining monitoring is expected to include monitoring of groundwater, surface water, and vegetation. Additionally, it is expected that minor issues such as rilling, slumping, and washouts will require repairs while the site settles and reaches a state of balance.

The final reclamation and mine closure cost estimate associated with RVM (including the haul road to Wooley Valley tipple and the mine shop) is about $$51.3Million, which is to be predominately incurred over a period of 4 years after production ceases in the year 2025.

20.2.8.2 Lanes Creek Mine (LCM)

The LCM is designed as a three-phase mine from south to north with little to no opportunity for concurrent reclamation. Therefore, three piles external to the pit are designed to temporarily store overburden during mining. The northern pile is designed for N-SOVB, the eastern pile is designed for GM, and the southern pile is designed for SOVB. The southern SOVB pile is built on top of the historic external pile noted above and in the Lanes Creek Mine Preliminary Assessment Report. This legacy pile is the source of most of the negative historic environmental impacts associated with the LCM.

Mine closure and reclamation will include overburden disposal that consists of full re-handle of all three piles into the final open pits as backfill. The removal of the historic external pile as backfill will address the environmental impacts associated with the historic mining of the site, remediation through mining.

The approved cap and cover will be built on all areas disturbed by mining.

All facilities will be removed from the site.

All earthen features: haul roads, ready lines, and water management features, will be removed and collected material placed in the pit as backfill.

Post mining monitoring is expected to include monitoring of, groundwater, surface water, and vegetation.

Additionally, it is expected that minor issues such as riling, slumping, and washouts will require repairs while the site settles and reaches a state of balance.

The final reclamation and mine closure cost estimate associated with LCM is about $7.5 million to be incurred over a period of mutual or shared backfilling and reclamation of LCM and RVM after production ceased in the year 2020.

20.2.8.3 H1SMC and NDR (H1SMC & NDR)

During operations, direct placement of overburden as pit backfill (concurrent reclamation) reduces the volume of material requiring re-handle post mining. Direct placement of overburden is not always possible as the volume of overburden and available volumes of open pit space are not always fully synchronized. As such, the H1SMC and NDR site may create overfill piles that will be placed on backfill and/or temporary external storage piles during mining. Additionally, the process of concurrent reclamation leaves open pit space at the end of mining.

Post mining closure will include the re-handling of these overfill and temporary piles into the final phases of the mine so no open pit remains. All facilities will be removed from the site. All earthen features, haul roads, ready lines, and water management features, will be removed and collected material placed in the pit as backfill. The approved cap and cover will be built on all areas that did not receive the cap and cover during mining.

Post mining monitoring is expected to include monitoring of groundwater, surface water, and vegetation.

Additionally, it is expected that minor issues, such as rilling, slumping, and washouts will require repairs while the site settles and reaches a state of balance.

The final reclamation and mine closure cost estimate associated with H1SMC and NDR is about $218 million to be incurred over a period of 5 years for NDR and 9 years for H1SMC after production ceases.

21.0 CAPITAL AND OPERATING COSTS

This Item contains forward-looking information related to capital and operating cost estimates for the Conda Project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: future economic conditions vary from estimates and projections contained in the TR which may increase or decrease cost estimates, as estimated in constant (or real) dollar terms such as projected labor and equipment productivity levels, costs of labor and materials, development costs. A sensitivity analysis, described in Item 22.6 demonstrates the sufficiency of the gross margin available to account for changes in material factors or assumptions.

21.1 Operating Costs

21.1.1 Production Costs

WSP estimated the annual production costs of the phosphate ore produced in the LOMP as described in Item 16.5. Costs were estimated on an FOB basis for run-of-mine ore loaded onto trains at the Tipple. Currently, mining at RVM is performed by KMG under a mining contract. KMG costs therefore represent the bulk of the mine operating costs. Cash operating costs include operating and maintenance labor; supplies; repair parts; power; equipment leases; overheads and administration; royalties; and miscellaneous costs. All costs are estimated in real 2022$ terms.

The cost model developed to estimate operating costs was based on actual incurred costs from January 2022 through December of 2022 at RVM. The data was organized and analyzed to develop functional costs, suitable to develop the operating costs model. WSP used the functional cost data to develop the operating cost model to estimate future LOMP costs. Table 21.1 summarizes the economic assumptions that were built into the cost model.

Table 21.1: Summary of Economic Assumptions

Unit Costs	Units	RVM[2]	H1SMC	NDR
Ore Cost per ton Mined	$/wet ton ore	7.47	4.61	4.61
Overburden / Interburden Cost per ton mined	$/wet ton waste	3.86	3.06	3.06
Overburden / Interburden Cost per cubic yard mined	$ / cubic yard	7.65	6.12	6.12
Royalty Cost per ore ton Mined	$/wet ton ore	1.70	2.48	2.59
Tipple Cost per ore ton delivered[1]	$/wet ton ore	1.32	1.00	1.00

Note: 1. The estimated Wooley Valley Tipple costs tied to RVM have improved with a value of $1.10/wet ton ore budgeted for 2024.
2. RVM costs as of the 2019 TR and have not been updated for this TR.

All costs developed were for the production and delivery of phosphate ore to the Tipple and loaded onto rail cars. Costs include mine development; all pre-stripping and mining functions; mine services, concurrent reclamation, stockpiling at the Tipple and loading onto rail cars. Notable changes between the economic assumptions from RVM to H1SMC/NDR include lower ore costs and lower tipple costs for H1SMC/NDR. The lowered ore cost is attributable to a shortened haul distance to the H1/NDR Tipple relative to the haulage distance from RVM to the Wooley Valley Tipple. The lowered tipple cost is attributable to efficiency gains associated with the newly constructed tipple, including a railcar indexer which will allow for more precise and efficient loading. Costs associated with final reclamation and asset retirement are provided in Item 20.2.8.

21.1.2 Reclamation and Asset Retirement Obligation Costs

Asset retirement obligation costs for RVM are described in Item 20.2.8.1.

Asset retirement obligation costs For H1SMC and NDR were estimated using the following assumptions:

- Maximum final wall slope of 3 Horizontal to 1 Vertical
- Minimum grade for drainage – 2%
- Positive Drainage required with no remaining in-pit lakes
- Overstack material within the pit crests will be graded down to original topography at a minimum

WSP examined the intersection of the ultimate pit and the original topography for both H1SMC and NDR to identify the lowest elevation where the pit intersects the topography. This point on each pit was assumed to be where the drainage of the mined area would tie-in to the original drainage. WSP then estimated the amount of fill material required to in-fill the final pit to the point where positive drainage was established. The estimated ARO for each pit was then developed using the quantity of fill material, the unit costs provided by Conda, and the average haul distance from the overstack area to the final pit fill area.

21.2 Capital Costs

21.2.1 RVM

Mining capital for the completion of RVM was minimal as the property is fully developed and mining is accomplished through a mining contractor. Capital expenses were estimated for the Blackfoot River Road Realignment and Main Shop Generator and totaled $1.7 M.

21.2.2 H1SMC and NDR

Itafos provided capital cost estimates for anticipated H1SMC and NDR expenditures. Items included in the capital cost expenditures include permitting, mitigation, development and exploration, and infrastructure. Capital cost expenditures for mining equipment were not included in the cost estimate. The shovels are supplied by Conda as part of a capital lease program. These leases costs are incorporated into the unit operating costs. For the remainder of the major equipment, Conda intends to continue using a mining contractor who will supply their own mining equipment. Capital cost requirements for the processing plant upgrades discussed in Item 17.0 were reviewed by the QP but were not part of the Gross Margin Available Analysis.

22.0 ECONOMIC ANALYSIS

This Item contains forward-looking information related to economic analysis for the Conda project. The material factors that could cause actual results to differ materially from the conclusions, estimates, designs, forecasts or projections in the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, designs, forecasts or projections set forth in this Item: estimated capital and operating costs, project schedule and approvals timing, availability of funding, projected commodities markets and prices.

The RVM Economic Analysis is detailed in the 2019 Conda TR, Item 22, with the resultant transfer prices and GMAs on an annual basis as shown in Table 22.1. For RVM, the forecast net margins remaining are positive and substantial as percentages of the forecast market prices of MAP and SPA. For this reason, the phosphate ore production from RVM is economical and supports the Mineral Reserve estimates stated in this Technical Report.

Table 22.1: RVM Economic Analysis - Comparison of Transfer Prices with Gross Margins Available (real 2019$ terms)

Item	Units	2019	2020	2021	2022	2023	2024	2025
Gross Margin Available per ton of P_2O_5 Required	$/dry st	269	286	308	313	315	349	381
Transfer Price per ton of P_2O_5 Loaded FOB Rail	$/dry st	184	173	185	185	174	175	124
Excess Gross Margin per ton of P_2O_5 Required	$/dry st	85	113	123	128	141	174	257

22.1 Principal Assumptions

The following principal assumptions were used for the TR economic analysis supporting the mineral reserve estimates for H1SMC and NDR stated in Item 15.0.

- The phosphate ore production schedule is based on the Measured and Indicated Mineral Resources stated in Item 14.0 for H1SMC, and NDR and the Modifying Factors applied to those Resources as described in Item 15.1. In accordance with CIMDS, only Measured and Indicated Mineral Resources are used to estimate Mineral Reserves.
- The annual phosphate ore production schedule is based on supplying annually about 537,000 dry tons ROM of P_2O_5 to the CPP from NDR with P_2O_5 grade greater than 20%. For H1SMC, the ROM requirement increases to 545,000 tons of P_2O_5 per year.
- The H1, and NDR production plans are based on the surface mining methods described in Item 16.0.
- Operating and capital cost estimates for the economic analysis are as described and justified in Item 21.0.
- Contract mining operations were assumed to continue for the full period of the economic analysis. Contract mining has been successful at the Conda mines historically, and it is reasonable to assume that contract mining services will continue to be available in southeastern Idaho at competitive prices over the period of the economic analysis.
- Union Pacific rail services are assumed to continue over the economic analysis period. The UPRR is a major national rail service provider and rates for transport of phosphate ore to the CPP are assumed to remain consistent with existing rates.

- The economic analysis period is 16 years which exhausts the Proven and Probable Reserves at the H1SMC, and NDR. All ore production and final reclamation costs at the H1 and NDR are assumed to be recovered through annual imputed transfer prices of ore delivered to the Rail Loadout for transport to the CPP.
- To determine the annual cost to Conda of phosphate ore FOB railcar at the tipple including time value of money and risk, an assumed margin is added to the estimated annual capital and operating costs that is sufficient to generate a 7% pre-tax IRR to the mining operation. The 7% figure reflects the estimated time value of money over the economic analysis period plus a risk premium. The risk premium reflects the assumptions that future conditions affecting the mineral projects are not materially different than conditions prevailing as of the Effective Date. That is, expected geological and mining conditions at the mineral projects and economic and political conditions prevailing generally as of the Effective Date will continue over the LOMP period.
- In the cash flow forecast, the production cost plus the assumed margin is shown as an imputed transfer price of phosphate ore FOB Railcar.

22.2 Discounted Cash Flow Forecast

The DCF model was developed to perform an economic analysis of the projected LOMP capital and operating costs described in Item 21.0. The discounted cash flow forecast for phosphate ore produced and loaded in the LOMP from H1 and NDR is shown in Table 22.2.

Table 22.2: DCF Forecast (real 2022$ terms)

Item	Units	Totals or Avg.	2023	2024	2025	2026	2027	2028	2029	2030
Production										
Waste Tonnage	short tons (wet) 000s	358,641		3,479	17,990	25,360	24,493	27,437	28,695	27,392
Waste Volume	bcy 000's	180,676		1,753	9,063	12,776	12,339	13,822	14,456	13,799
Volume Strip Ratio	bcy / short ton (wet)	5.8		5.4	6.4	5.8	6.6	5.0	6.7	5.2
Ore Moisture	percent	11%		11%	11%	11%	11%	11%	11%	11%
Ore Mined @ 11% Moisture	Tons (wet) 000s	31,310		324	1,420	2,188	1,883	2,759	2,144	2,658
Ore Mined (dry)	Tons (dry) 000s	27,866		288	1,264	1,947	1,676	2,456	1,909	2,366
P_2O_5	Wt. % (dry)	20.0%		20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Tons P_2O_5 in Ore	Tons (dry) 000s	5,573		58	253	389	335	491	382	473
Mining Costs										
Waste	$ 000s	1,287,594		10,640	55,265	81,102	77,189	83,518	113,061	101,405
Ore	$ 000s	196,218		1,950	8,558	13,305	10,998	14,848	12,380	15,459
Concurrent Reclamation Cost	$ 000s	6,240		0	0	65	295	863	609	65
Royalty Cost	$ 000s	68,619		765	3,405	5,169	4,392	5,986	4,776	5,696
Tipple and Stockpile Cost	$ 000s	31,310		324	1,420	2,188	1,883	2,759	2,144	2,658
Total Mining Cost	**$ 000s**	**1,589,981**		**13,679**	**68,648**	**101,829**	**94,757**	**107,975**	**132,971**	**125,284**
Total Cost per Ore Ton	$/ton (wet)	50.78		42.26	48.33	46.54	50.32	39.13	62.01	47.13
Total Cost per Ton P_2O_5	$/ton P_2O_5	285.3		237	272	261	283	220	348	265
Final Reclamation & Closure Cost										
Total Final Reclamation & Closure Cost	**$ 000s**	185,605		0	0	0	6,478	6,913	6,913	6,704
Capital										
Capital Costs	$ 000s	94,163	37,990	23,806	7,265	7,395	5,752	1,950	2,116	2,340
Working Capital (Initial is at Time 0)	$ 000s	0	0	14,152	55,706	33,835	-7,332	13,965	24,472	-7,249
Total Capital	**$ 000s**	**94,935**	**37,990**	**37,958**	**62,971**	**41,230**	**-1,580**	**15,915**	**26,589**	**-4,909**
Final Reclamation Accrual	**$ 000s**	75,886	0	785	3,443	5,303	4,564	6,688	5,198	6,443
Risk Margin	**$ 000s**	248,692	0	2,571	11,282	17,378	14,957	21,917	17,034	21,116
Total Cost of Ore	**$ 000s**	**1,976,624**	**0**	**17,035**	**83,372**	**124,510**	**120,756**	**143,493**	**162,115**	**159,547**
Total Cost Of Ore (Transfer Price)	**$/ton P_2O_5**	**355**	**0**	**296**	**330**	**320**	**360**	**292**	**425**	**337**
Discounted Cash Flow Analysis										
Annual Cash Flows	$ 000s	106,104	-37,990	-34,602	-48,247	-18,549	21,101	12,690	-4,358	32,468

Item	Units	Totals or Avg.	2031	2032	2033	2034	2035	2036	2037	2038 to 2071
Production										
Waste Tonnage	short tons (wet) 000s	358,641	28,139	36,602	35,841	35,096	35,553	24,435	8,129	-
Waste Volume	bcy 000's	180,676	14,176	18,440	18,056	17,680	17,911	12,310	4,095	-
Volume Strip Ratio	bcy / short ton (wet)	5.8	5.9	7.0	6.6	5.7	6.8	4.4	2.5	-
Ore Moisture	percent	11%	11%	11%	11%	11%	11%	11%	11%	11%
Ore Mined @ 11% Moisture	Tons (wet) 000s	31,310	2,409	2,621	2,722	3,122	2,646	2,801	1,612	-
Ore Mined (dry)	Tons (dry) 000s	27,866	2,144	2,333	2,423	2,778	2,355	2,493	1,434	-
P_2O_5	Wt. % (dry)	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	0.0%
Tons P_2O_5 in Ore	Tons (dry) 000s	5,573	429	467	485	556	471	499	287	-
Mining Costs										
Waste	$ 000s	1,287,594	98,656	129,354	134,690	137,296	144,063	91,829	29,526	0
Ore	$ 000s	196,218	14,414	16,380	18,077	20,994	18,275	19,427	11,154	0
Concurrent Reclamation Cost	$ 000s	6,240	0	65	713	713	713	713	713	713
Royalty Cost	$ 000s	68,619	5,251	5,634	5,709	6,601	5,652	6,070	3,511	0
Tipple and Stockpile Cost	$ 000s	31,310	2,409	2,621	2,722	3,122	2,646	2,801	1,612	0
Total Mining Cost	**$ 000s**	**1,589,981**	**120,730**	**154,055**	**161,911**	**168,725**	**171,348**	**120,841**	**46,514**	**713**
Total Cost per Ore Ton	$/ton (wet)	50.78	50.11	58.77	59.48	54.05	64.76	43.14	28.86	-
Total Cost per Ton P_2O_5	$/ton P_2O_5	285.3	282	330	334	304	364	242	162	0
Final Reclamation & Closure Cost										
Total Final Reclamation & Closure Cost	**$ 000s**	185,605	6,704	10,045	225	0	0	225	17,858	123,540
Capital										
Capital Costs	$ 000s	94,163	3,320	2,230	0	0	0	0	0	0
Working Capital (Initial is at Time 0)	$ 000s	0	-4,767	33,505	7,942	7,155	2,218	-50,375	-75,340	-47,116
Total Capital	**$ 000s**	**94,935**	**-1,447**	**35,735**	**7,942**	**7,155**	**2,218**	**-50,375**	**-75,340**	**-47,116**
Final Reclamation Accrual	**$ 000s**	75,886	5,839	6,353	6,597	7,566	6,413	6,790	3,906	0
Risk Margin	**$ 000s**	248,692	19,135	20,820	21,620	24,796	21,016	22,251	12,801	0
Total Cost of Ore	**$ 000s**	**1,976,624**	**152,408**	**191,273**	**190,353**	**201,087**	**198,777**	**150,106**	**81,078**	**713**
Total Cost Of Ore (Transfer Price)	**$/ton P_2O_5**	**355**	**355**	**410**	**393**	**362**	**422**	**301**	**283**	**0**
Discounted Cash Flow Analysis										
Annual Cash Flows	$ 000s	106,104	26,421	-8,563	20,276	25,207	25,210	79,416	92,046	-76,424

As shown in Table 22.2, an average transfer price of $287 per ton of contained P_2O_5 in run-of-mine ore delivered FOB Rail at the Tipple is required to cover all phosphate ore production and final reclamation costs and produce a

7% pre-tax IRR to the mining operations. During full production years, the transfer prices required vary over the period from $225 to $349 of P_2O_5 (note: last year of full production is 2036).

The average transfer price of $287 per ton in Table 22.2 is presented to confirm the minimum economic viability of the mining operations. This imputed transfer price is an estimate and may or may not be indicative of the actual transfer price that the Company expects to achieve, nor does it contemplate market prices of downstream fertilizer derived from mined ore and the corresponding impact on future cash flows. As outlined in Item 19.0, substantial gross margins are available for H1SMC and NDR based on current and forecasted fertilizer market prices. The resulting NPV and IRR values for the mining operations are expected to exceed the respective $0 and 7% figures calculated under the minimum economic viability scenario in Table 22.2.

22.3 Net Present Value, Internal Rate of Return, Payback Period

As discussed in Section 22.1, the value of 7% was used as a minimum IRR in the economic analysis. This value was chosen to reflect the time value of money on the project and the low relative risk of the mining project. By definition, using the 7% IRR as a discount rate yields an NPV of $0. Because the mining operation is well established, only $62 M of initial capital expenditure is required in 2023 and 2024. In the discounted cash flow presented above with a 7% IRR and NPV of $0, the overall payback period for capital expenditures is within 5 years.

22.4 Taxes, Royalties, Other Government Levies or Interests

The phosphate mines do not file separate tax returns on their operations because Conda is a subsidiary of Itafos Inc. Costs of exploration, development, and production including depreciation, depletion, and amortization related to the mining operations are deductions on the overall corporate returns for Itafos Inc. Because of the centralized corporate structure of Conda, no state or federal income tax expense or benefit has been included in the DCF model for the mining operation.

22.5 Economic Analysis

Because the Itafos phosphate mines are captive suppliers of run-of-mine ore to the Itafos CPP, market demand risk is negligible. Market price risk is dependent on the ability of Itafos to pay the mining and loading costs of the run-of-mine phosphate ore over the study period. Itafos' ability to cover the mining and loading costs is dependent upon sales of fertilizer products produced from the CPP and the Gross Margin Available after all CPP operating costs except for phosphate ore. Item 19.0 summarizes the 2023 CRU Phosphate Study of forecast fertilizer MAP and SPA sales prices and estimated chemical plant ex-Rock costs. Based on the CRU Study information, Table 22.3 shows the forecast Gross Margins from fertilizer product sales that are available to cover phosphate ore production costs for the first 5 years of production from NDR and H1SMC.

Phosphate ore is economical if the estimated transfer price is less than the estimated Gross Margin Available. Table 22.3 compares the total estimated cost of phosphate ore with the forecast GMAs from MAP and SPA fertilizer product sales.

Table 22.3: NDR and H1SMC Economic Analysis - Comparison of Transfer Prices with Gross Margins Available (real 2022$ terms)

Item	Units	2024	2025	2026	2027	2028
Gross Margin Available per ton of P_2O_5 Required	$/dry st	358	358	358	352	345
Transfer Price per ton of P_2O_5 Loaded FOB Rail	$/dry st	225	249	245	277	237
Excess Gross Margin per ton of P_2O_5 Required	$/dry st	133	109	113	75	108

Note: The GMA in the table for 2024-2026 is specific NDR. The GMA for 2028 is specific to H1. For 2027 as mining transitions from NDR to H1 the GMA in the table is an average of the GMAs for H1 and NDR.

For both MAP and SPA products, the forecast net margins remaining are positive and substantial as percentages of the forecast market prices of MAP and SPA. For this reason, the phosphate ore production plan from NDR and H1SMC is economical and supports the Mineral Reserve estimates stated in this Technical Report.

22.6 Sensitivity Analyses

Using variants in commodity price, grade, capital, and operating costs, or other significant parameters as appropriate, a sensitivity analysis was performed on the discounted cash flow model with the following results.

If capital and operating costs in the economic model are increased by 20% in real 2022$ terms, then the result is that the average transfer price over the life of the mines will increase from $287 per ton to $337 per ton of P_2O_5 delivered, or about 17%. The impact of price increase can be absorbed by forecast increases in fertilizer product prices and the resulting forecast GMAs to cover phosphate ore production. Table 22.4 shows the impact of a 20% increase in OPEX and CAPEX on the imputed transfer price and overall profit margin.

Table 22.4: NDR and H1SMC Sensitivity Analysis - 20% Increase in OPEX and CAPEX over Initial 5 Year Period

Item	Units	2024	2025	2026	2027	2028
Gross Margin Available per ton of P_2O_5 Required	$/dry st	358	358	358	352	345
Transfer Price per ton of P_2O_5 Loaded FOB Rail	$/dry st	265	292	287	324	278
Excess Gross Margin per ton of P_2O_5 Required	$/dry st	93	66	71	28	67

Table 22.5 summarizes the impact on the project economics over the initial 5 year period in a situation where operating expenses decreased by 10%. In this situation, the average imputed transfer price over the life of the mines will decrease from $287 per ton to $264 per ton of P_2O_5 delivered, or about 8%

Table 22.5: NDR and H1SMC Sensitivity Analysis - 10% Decrease in OPEX over Initial 5 Year Period

Item	Units	2024	2025	2026	2027	2028
Gross Margin Available per ton of P_2O_5 Required	$/dry st	358	358	358	352	345
Transfer Price per ton of P_2O_5 Loaded FOB Rail	$/dry st	207	228	224	255	220
Excess Gross Margin per ton of P_2O_5 Required	$/dry st	151	130	134	97	125

If the P_2O_5 grade is diminished, then more tons of phosphate ore must be mined to maintain the CPP P_2O_5 requirement of approximately 537,000 tons per year from NDR and 545,000 tons per year from H1SMC. This will increase mining contractor costs and will also reduce the GMAs due to increased costs associated with washing and rail transportation. Assuming that the average grade of ore in the H1SMC/NDR production plan is reduced from 24.7% to a minimum of 20% P_2O_5, then ore production required would need to increase by 23.4%, which would result in an associated increase to the average imputed transfer price over the life of the mine will increase from $287 per ton to $355 per ton of P_2O_5 delivered of phosphate ore. Table 22.6 shows the impact of a decrease in ore grade on the imputed transfer price and profit margin.

Table 22.6: NDR and H1SMC Sensitivity Analysis - Decrease in Grade to 20% over Initial 5 Year Period

Item	Units	2024	2025	2026	2027	2028
Gross Margin Available per ton of P_2O_5 Required	$/dry st	358	358	358	352	345
Transfer Price per ton of P_2O_5 Loaded FOB Rail	$/dry st	296	330	320	360	292
Excess Gross Margin per ton of P_2O_5 Required	$/dry st	62	28	38	-8	53

A substantial decrease in the product sales prices of MAP, NPS, and SPA without a commensurate decrease in costs would result in erosion of the profit margin as illustrated in Table 22.7. The opposite situation is presented in Table 22.8 which shows the effect of a 10% increase in product sales price over the initial 5 year period.

Table 22.7: NDR and H1SMC Sensitivity Analysis - 10% Decrease in Product Sales Price over Initial 5 Year Period

Item	Units	2024	2025	2026	2027	2028
Gross Margin Available per ton of P_2O_5 Required	$/dry st	253	253	253	241	241
Transfer Price per ton of P_2O_5 Loaded FOB Rail	$/dry st	225	249	245	277	237
Excess Gross Margin per ton of P_2O_5 Required	$/dry st	28	4	8	-36	4

Table 22.8: NDR and H1SMC Sensitivity Analysis - 10% Increase in Product Sales Price over Initial 5 Year Period

Item	Units	2024	2025	2026	2027	2028
Gross Margin Available per ton of P_2O_5 Required	$/dry st	462	462	462	449	449
Transfer Price per ton of P_2O_5 Loaded FOB Rail	$/dry st	225	249	245	277	237
Excess Gross Margin per ton of P_2O_5 Required	$/dry st	237	213	217	172	212

23.0 ADJACENT PROPERTIES

Under NI 43-101, an “adjacent property” means a property:

a) In which Itafos does **not** have a [real property] interest; (bracketed language added by the QP)
b) That has a boundary reasonably proximate to the property being reported on; and
c) That has geological characteristics similar to those of the property being reported on.

The sources of the information in this Item are identified in Item 27.0.

The QP has been unable to independently verify the information presented in this Item and the information is not necessarily indicative of the mineralization on the Property that is the subject of this report.

The following adjacent properties are material to the operation of the RVM and the development of the NDR and H1SMC project. See Figure 23.1 for locations of each adjacent property.

The South Rasmussen Mine (SRM) on State Lease E-07958 and Federal Lease I-23658 is owned by P4/Bayer. SRM is located about one half-mile northwest of the RVM and was operated from 2001 to 2013. Site reclamation was largely completed in 2014, and in 2015 the IDEQ issued Bayer a Point of Compliance (POC) Determination. Subsequently, POC groundwater monitoring wells were installed in addition to construction of a series of permeable reactive barriers (PRB) to reduce selenium concentrations in the groundwater. In January 2017, a ROD was issued for the RVM. The agency preferred alternative, the Rasmussen Collaborative Alternative (RCA), included placement of the initial RVM overburden into the SRM open pit to facilitate additional reclamation of the SRM. Itafos commenced backfilling operations into SRM in October 2017 and backfilling was completed in Q3 of 2020.

The Nutrien North Maybe Mine (NMM) on Federal Lease I-04 abuts the south end of the NDR Lease. The NMM Open Pit Sub Operable Unit (OPSOU) investigation is complete and no further remediation is currently proposed in the draft ROD through CERCLA under an Administrative Settlement Agreement and Order on Consent (ASAOC) between Nutrien, USFS, IDEQ, and the Shoshone-Bannock Tribes with the USFS as Lead Agency. It is anticipated that mining on the NDR Lease will occur in the first few years of the mine plan and initiated by overburden removal to gain access to the ore. Overburden from NDR will be placed in the existing NMM pit as backfill.

The NMM West Ridge on Lease ID-04, located just south of the NDR Lease, is currently undergoing investigation and remediation through CERCLA under a Unilateral Administrative Order (UAO) between Huntsman Advanced Polymers and Wells Cargo Corporation and Federal Agencies (USFS as Lead Agency). Itafos plans to utilize a portion of this area to access NDR.

The SMCM on Federal Lease I-04 is currently owned by Nutrien. Itafos plans to initially haul and place overburden from H1 into the existing SMCM north and south pits as backfill. This plan is contingent on a successful agreement with Nutrien, approval with the regulatory agencies and compatibility with NEPA. There are phosphate ore resources remaining in the southern portion of the SMCM that will be extracted in conjunction with mining the Known Phosphate Leasing Area described later in this Item. This will facilitate access to the SMCM for backfilling the pit(s). The SMCM investigation is complete and no further remediation is currently proposed in the draft ROD through CERCLA under an Administrative Settlement Agreement and Order on Consent (ASAOC) between Nutrien, USFS, IDEQ, and the Shoshone-Bannock Tribes with the USFS as Lead Agency).

Separating the H1 Lease and the SMCM is an unleased section of land called the Known Phosphate Lease Area (KPLA). As part of the H1 MRP application, Itafos requested that this KPLA be joined to the H1 Lease through a lease modification which would allow Itafos to extract the KPLA phosphate resources. Notable to this KPLA is that an active pipeline currently traverses the area, however, an agreement is in place that the pipeline will be relocated at the owner's cost.

The following adjacent properties not owned by Itafos have phosphate mineralization.

The Dry Ridge Federal Lease I-07238 held by Solvay USA Inc. abuts the south end of the H1 Lease, is approximately 520 acres, and extends along the known north-south trending outcrop of phosphate bearing horizons.

The Caldwell Canyon Leases ID-000002, ID-014080 and ID-013738 are owned by P4/Bayer. The center of the Caldwell Canyon Leases is located about six miles south-southeast of the North Dry Ridge (NDR) Lease. In May 2019, the BLM released the Final Environmental Impact Statement (EIS) for the Caldwell Canyon Mine and issued a ROD in August 2019 to approve the Caldwell Canyon Mine Project, an open pit phosphate mine.

Subsequent to the ROD, various environmental groups filed suit against the BLM (Center for Biological Diversity, Western Watersheds Project and Wildearth Guardians v. Bureau of Land Management, Case No. 4:21-cv-00182-BLW) alleging incomplete analysis of certain aspects of the EIS. In January 2023, Judge Lynn Winmill, Federal Judge in US Courts based in Boise, ID, issued an initial ruling to the lawsuit. Then in May 2023, Judge Winmill vacated the ROD and ordered BLM to address the matters of the EIS that were deemed incomplete.

At present, BLM and P4/Bayer are determining a course of action to reinstate the ROD.

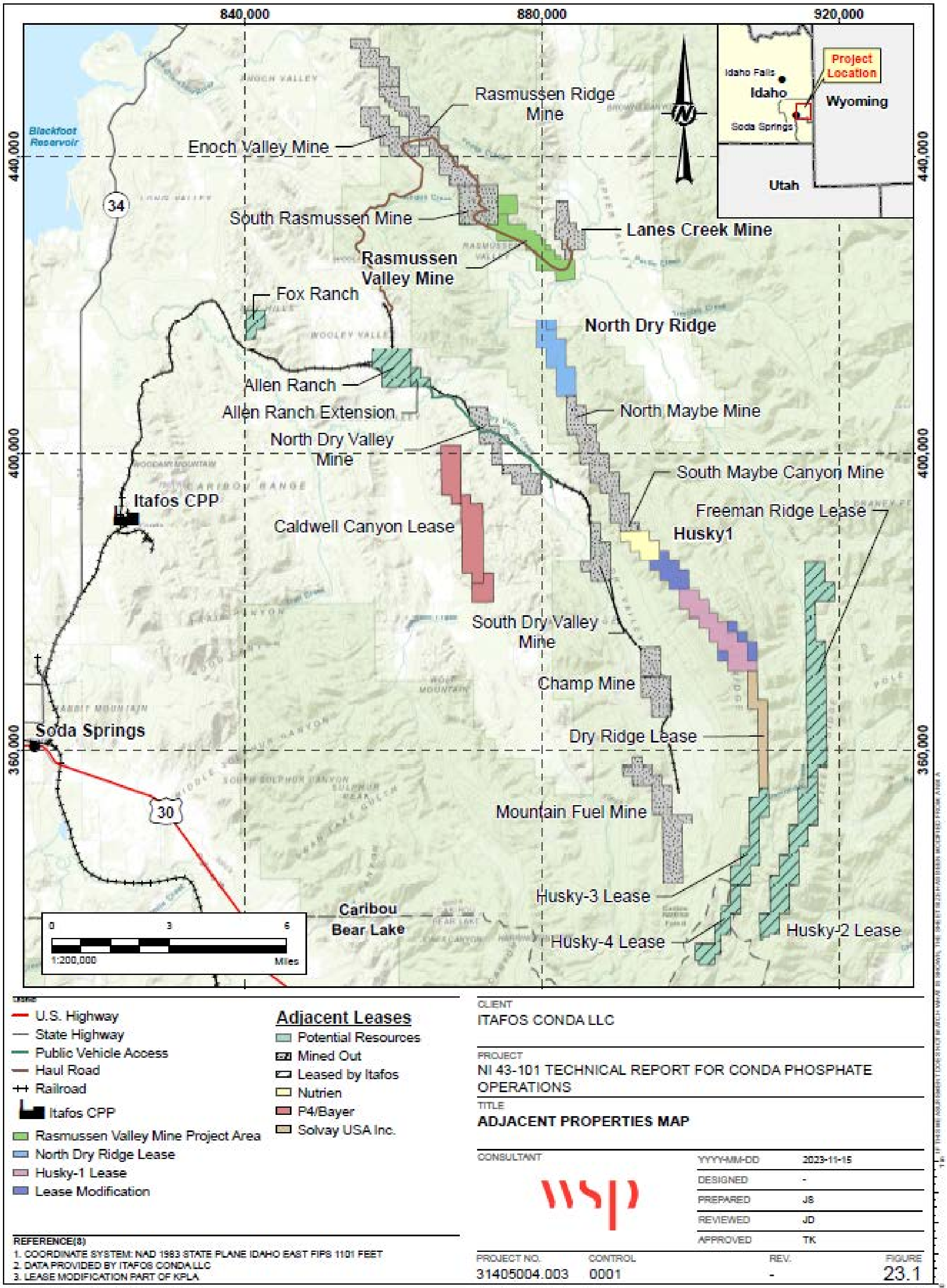


Figure 23.1: Adjacent Properties Map

24.0 OTHER RELEVANT DATA AND INFORMATION

It is the opinion of the QPs that all material information has been stated in the above Items of the TR.

25.0 INTERPRETATION AND CONCLUSIONS

This Item presents the interpretation and conclusions of the TR Authors.

25.1 Geology and Mineral Resource Estimates

Regarding geology and Mineral Resource estimation, the WSP QP has the following interpretations and conclusions presented in this TR:

- WSP's review of data collection methods and independent data verification process has confirmed the following:
  - Data were collected under the supervision of senior Company geologists and engineers that meet the definition of Qualified Persons under NI 43-101.
  - The data appear to have been obtained using appropriate industry standards.
  - The data compiled in digital tabular format appears to be free of errors or omissions relative to original source files (descriptive logs, laboratory certificates, wireline logs, and so forth).
  - The data appears to be a reliable and representative of the geology and grade data for each of the projects and are suitable for the development of geological models and preparation of Mineral Resource estimates.
- The development of resource pits for the Conda projects using reasonable cost and pricing parameters and assumptions, support reasonable prospects for future economic extraction for each of the projects.
- WSP has estimated categorized Mineral Resources, in accordance with the definitions presented in NI 43-101 for each of the projects addressed in this TR. A summary of the Resource Estimates is presented in Item 14.0 of this TR.
- The current estimates summarized in Item 14.0 of this TR reflect an increase in Mineral Resources for H1SMC and a slight decrease in Mineral Resource for RVM and NDR relative to the previous estimates.
- Opportunities exist to further upgrade current categorization of Mineral Resources (i.e., potential to upgrade Inferred to Indicated, Indicated to Measured) as well as to add additional resource tons currently not included in the estimates. The opportunities for additional future resources include but are not limited to the following:
  - Along strike and down dip (at depth) of existing delineated resources for the Conda projects

WSP has identified the following risks and opportunities relating to geological modeling and mineral resource estimation for the projects presented in this TR.

- Risk relating to the potential impact of positional reliability of drill hole intercepts in some Conda projects drill holes due to lack of downhole positional survey data in the historical drill holes. Future drilling programs should include downhole positional surveys to allow for evaluation of the impacts of drillhole deviation on the spatial positioning of downhole data used for modeling and estimation purposes.
- Risk relating to the assignment of average densities from limited number of samples introduces risk to the geological model and mineral resource estimation process as it assumes that there will be minimal variability in density within each of the units across their spatial extents within the individual deposits.

- Potential impact on CPP process with higher MgO values in H1SMC
- Opportunities to revisit minimum P_2O_5 grade requirements pending evaluation of alternative processing methods at CPP.

25.2 Mining and Mineral Reserve Estimates

Regarding Mining, the WSP QP has the following interpretations and conclusions for the RVM, H1, and NDR for the Mineral Reserve Estimates presented in this TR:

- WSP's review of these operations indicates:
  - The mining operation has a LOM of 15 years including approximately 2.5 years of production from RVM, 3.75 years of production from NDR and 11 years of production of H1SMC. Note that the time periods for the different pits overlap at the start and end of each pit.
  - There is a total of about 36.1 Mt (wet) of mineable ore reserves including 4.8 Mt of ore in the RVM, 4.9 Mt in the NDR Mine, and 26.4 Mt in the H1SMC Mine, a 37.8 Mt (wet) total reserve with the added 1.7 Mt in stockpile inventory.
  - The implemented equipment is suitable for mining in this type of environment.
- WSP used information provided by Conda as well as material gathered from site visits to prepare the following:
  - A pit optimization analysis, which included a wide range of economic pit shells:
    - Based on the assumptions used for the pit optimization and the existing mining method, WSP and Conda selected the agreed-upon pit shells for which to base the mine designs.
  - Phase pit designs and overburden storage designs closely follow the mining methods employed at Conda operations.
  - A production schedule.
- WSP identified the following risks and opportunities, which relate to mining and the Mineral Reserve estimation:
  - Risks related to geotechnical uncertainties.
  - Risks related to dewatering and heavy inflow of surface water.
  - Opportunities to reduce haulage and rehandle costs by optimizing OSA locations, haulage routes, and mining phases.

26.0 RECOMMENDATIONS

26.1 Geology and Mineral Resource Estimation Recommendations

Regarding geology and Mineral Resource estimation, the WSP QP's recommendations include the following:

- There is a need to increase focus on prioritizing and evaluating additional future potential areas to maintain a mineral resource base beyond the LOM presented in this TR. This may include exploration focused on upgrading known resources, along strike expansion of existing resource areas, or infilling gaps between past mining areas. However, an emphasis should be placed on a significant amount of step out work along trend, or in parallel trends to evaluate new potential areas. Work may include mapping, trenching, geophysics, drilling and other exploration methods. The additional exploration work should be organized into annual programs to allow for sustainable development of future potential resource areas as Conda approaches the end of the current LOMP. Evaluation of new potential exploration areas is estimated at approximately 1.4$M – 6.5$M annually for the next 5 years.
- Evaluate additional drilling needs with consideration towards additional quality control/verification purposes for areas reliant on older vintage drilling such as NDR and SMC. Confirmation drilling is estimated at 2$M.
- Perform additional density and moisture data for NDR and H1SMC to develop more robust project specific density and moisture values for these deposits for approximately $25,000.
- Upgrade and/or obtain new geological mapping and remote sensing information to get better positional data accuracy on the beds used in the old SMCM area to improve reliability and confidence for approximately $5,000 to $10,000.
- Conduct a surface geology mapping program to obtain structural geology points that can be incorporated into the geology models for NDR and H1SMC. Emphasis should be placed on attempting to locate modeled faults at surface. It is estimated that this would cost approximately $15,000.
- As part of any future exploration work, it is recommended to perform additional external check assays for Conda projects analytical data performed primarily at CPP. Approximately $5,000 to $15,000.
- As part of any future exploration work perform downhole positional surveys on drill holes at Conda projects. Costs would be covered as part of the annual exploration effort recommended above.

26.2 Mining and Mineral Reserve Estimation Recommendations

Regarding mining and Mineral Reserve estimation, the WSP QP's recommendations include the following:

- Evaluate the potential for lowering the cutoff grade and increasing reserves. A grade vs. reserve trade-off study is estimated to be $30,000.
- Optimize the PFS mine plan schedule for Conda's mid- and short-range planning purposes to levelize mining contractor haul truck requirements and add additional excavator capacity to fleet. This work can be performed internally or externally for approximately $50,000.
- Perform detailed truck haulage study to potentially create a mixed truck fleet by adding Caterpillar 785 trucks to fleet when truck fleet size expands in H1. Trade-off truck study is estimated to be $25,000.

- Optimize haulage routes during short-term mine planning process. Optimization of the haul routes could decrease cycle time and reduce the fleet size. Haul route optimization is estimated to be about $25,000.
- The geotechnical characteristics of the deposit are complicated. Probabilistic failure analysis could prove particularly beneficial due to the highly variable nature of the rock. An estimate to develop a probabilistic failure analysis is estimated to cost approximately $100,000.
- If Itafos advances the NDR and H1SMC to a Feasibility Level Study, more advanced geotechnical numerical modeling should be considered. An estimate to develop a geotechnical numerical model is estimated to be $100,000.

27.0 REFERENCES

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