



Sample Report

Construction Aggregate Reserve Quantity Estimate & Hypothetical Reserve Valuation

Public Sample Document — Construction Sand & Gravel

Prepared for:

Sample Construction Materials Client

Location Redacted

Prepared by:

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Member, Society for Mining, Metallurgy & Exploration (SME)

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1.0 Executive Summary

This public sample illustrates how Aggregate Consulting LLC combines field observations, test-hole data, volumetric modeling, and financial assumptions into a reserve quantity estimate and a hypothetical discounted cash flow valuation for a construction sand and gravel deposit. The sample reserve quantity is rounded to approximately **10,000,000 tons**. At an illustrative production rate of **500,000 tons per year**, the assumed reserve life is approximately **20 years**. The illustrative income-approach value indication is **\$11,900,000** (\$1.19 per reserve ton). A royalty-method cross-check at \$0.60 per ton produces approximately \$2,000,000 for the mineral or royalty-style interest.

2.0 Scope & General Limitations

The scope shown here includes a reserve quantity estimate, generalized geologic interpretation, calculation of mineable tonnage, and an illustrative income-approach valuation. The document is intentionally shortened for website publication. The assumptions used are illustrative; no independent market study, title review, permitting review, environmental review, tax analysis, or third-party sale-comparable analysis is included. The value indications shown should not be used for financing, purchase negotiations, tax reporting, litigation, or investment decisions.

3.0 Reserve Quantity Basis


The reserve quantity estimate follows the workflow used in construction materials reserve studies: identify the mineable horizon, determine the elevation of the top and bottom of pay, generate a volumetric model from surveyed and test-hole data, convert bank cubic yards to tons using an appropriate in-place unit weight, and disclose the calculation assumptions.

Quantity Item	Public Sample Assumption
Rounded mineable reserve quantity	10,000,000 tons
Illustrative production rate	500,000 tons / year
Approximate reserve life	20.0 years
Unit weight basis	In-place sand and gravel, generalized
Waste / loss factor	Not applied in this sample

4.0 Field & Geologic Evaluation

Field evaluation focuses on the boundary between overburden, mineable pay, marginal material, and non-pay material. For terrace and alluvial deposits, thickness and quality vary across short distances. Test holes, exposed walls, geologic mapping, and survey control are used together rather than relying on a single average pay depth. A representative redacted boring log is shown on the next page.

Representative Boring Log (S62) — Redacted

		Client: Sample Aggregate Client Project: Public Sample Prospect Address: Location Redacted	BORING LOG Boring No. S62 Page: 1 of 1							
		Drilling Start Date: 04/30/24 Drilling End Date: 04/30/24 Drilling Company: Drilling Method: Track-Mounted Backhoe Drilling Equipment: Driller: Logged By: John Pitts - Aggregate Consulting LLC.	Boring Depth (ft): 31 Boring Diameter (in): 0.0 Sampling Method(s): N/A DTW During Drilling (ft): N/A DTW After Drilling (ft): N/A Ground Surface Elev. (ft): N/A Location (Lat, Long): Coordinates Redacted							
DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	REMARKS	DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)			
0								(0.00') Sandy lean CLAY (CL); trace fine-coarse gravel, some fine sand, trace silt, trace clay, low plasticity, soft, dry, light reddish-brown, Sandy Overburden with clay.		0
10								(10.00') Well-graded SAND with clay (SW-SC); mostly fine grained sand, trace fine-coarse gravel, few silt, trace clay, loose, dry, dark reddish-brown, Dirty fine sand with some gravel		10
17								(17.00') Well-graded SAND (SW); mostly fine-medium grained sand, few fine-coarse gravel, loose, dry, light reddish-brown, Clean fine sand with gravel	(17.0') 10% Rock 90% Sand	17
26								(26.00') Poorly graded SAND with clay (SP-SC); mostly coarse grained sand, few fine-coarse gravel, trace silt, trace clay, medium dense, dry, dark reddish-brown, Coarse Sand & Gravel		26
30								(30.00') BEDROCK: Red Bed Shale		30
31								(31.00') Boring terminated		31
35										35
NOTES:										

Client name, project, address, and GPS coordinates removed. Lithology, depths, and stratigraphy from a real engagement.

5.0 Volumetric Methodology

Surveyed control points and test-hole observations are processed in survey software (Topcon 3D Office with GPS-controlled positioning) to build digital surface models (DSMs) for the top and bottom of the mineable formation. A **triangulated irregular network (TIN)** is generated between observed points to produce defensible in-place volume calculations. The TIN approach is more defensible than simply multiplying an average pay thickness by surface acreage when the formation is irregular, discontinuous, or affected by erosion and later alluvial deposition.

The volume between the two surfaces is converted to tons using a selected in-place (bank) unit weight. The example workflow uses 1.755 tons per cubic yard, a representative value for sand and gravel. GIS-based mapping and 3D reserve modeling support the cross sections, depth-based volumetric calculations, and mining plan that flow from this surface analysis. The TIN of the pay-bottom surface is shown on the next page, followed by the 3D volumetric model.

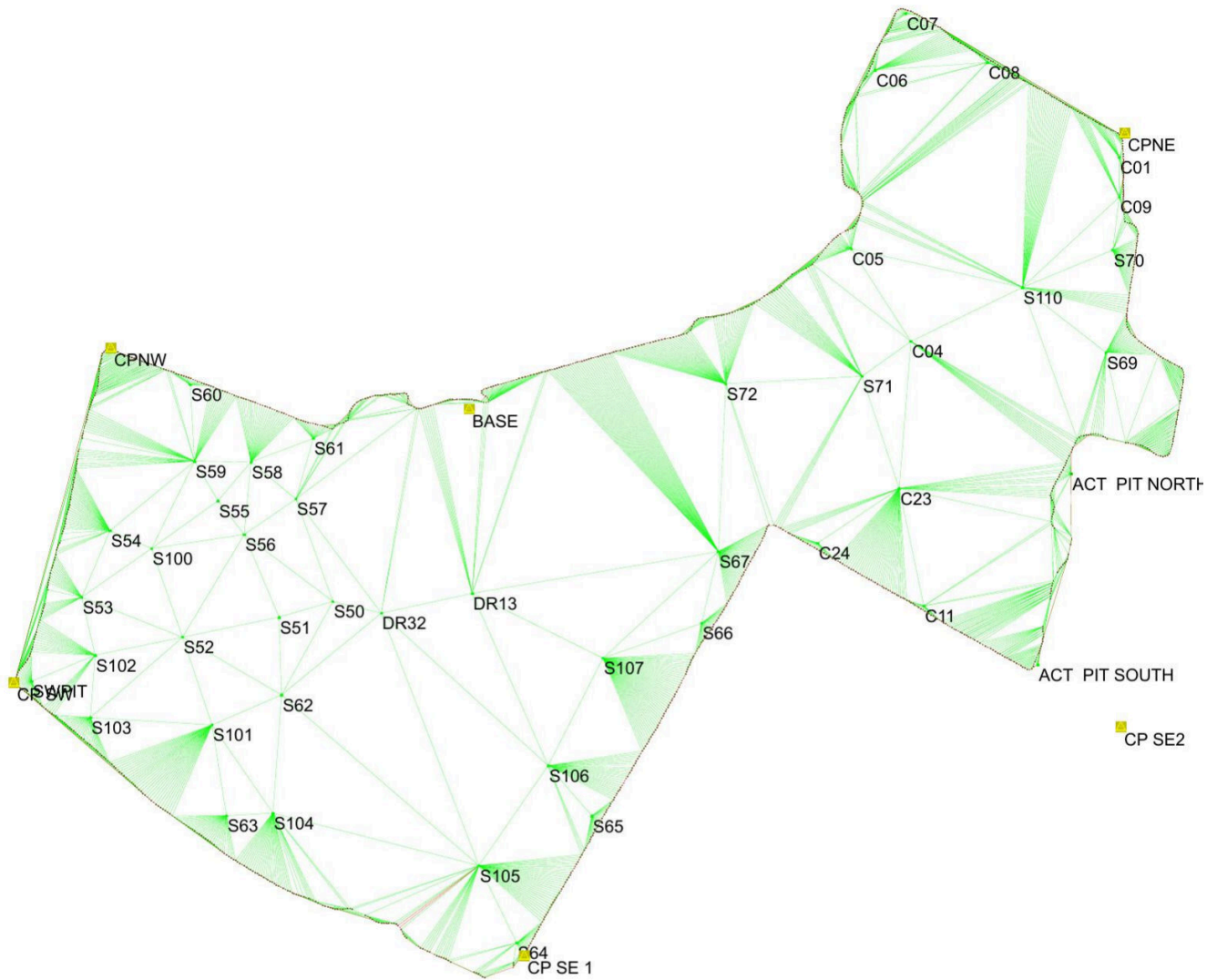
6.0 Hypothetical Valuation Approach

This section demonstrates how a reserve quantity estimate may be converted into a preliminary economic indication using a discounted cash flow (DCF) model. It is not based on confidential project economics. The selected discount rate is **14.0 percent**; in a real engagement the rate would be tested against market, permitting, product quality, reserve confidence, operating cost, customer concentration, supply, haul, and capital risks.

6.1 Valuation Assumptions

Assumption	Value
Mineable reserve quantity	10,000,000 tons
Annual production / sales rate	500,000 tons / year
Reserve life	20.0 years
Realized selling price	\$13.50 / ton
Cash operating cost	\$9.25 / ton
Sustaining capital allowance	\$0.35 / ton
Reclamation / closure allowance	\$0.15 / ton
Administrative allowance	\$0.15 / ton
Illustrative net cash margin	\$3.60 / ton
Discount rate	14.0%

TIN of Pay Bottom Surface



Triangulated irregular network (TIN) connecting surveyed test-hole locations across the mineable formation. Each green triangle represents a calculated surface element used in volumetric modeling. Project identifier and file path redacted.

6.2 Income Approach — Operator Cash Flow Method

Annual cash flow is calculated as annual sales tons multiplied by an assumed net cash margin. At 500,000 tons per year and an illustrative margin of \$3.60 per ton, steady-state annual cash flow is \$1,800,000 before discounting.

DCF Output	Indication
Steady-state annual cash flow	\$1,800,000
Discount rate	14.0%
Production period modeled	20 annual periods
Indicated DCF value, rounded	\$11,900,000
Indicated value per reserve ton	\$1.19 / ton

6.3 Annual DCF Schedule Summary

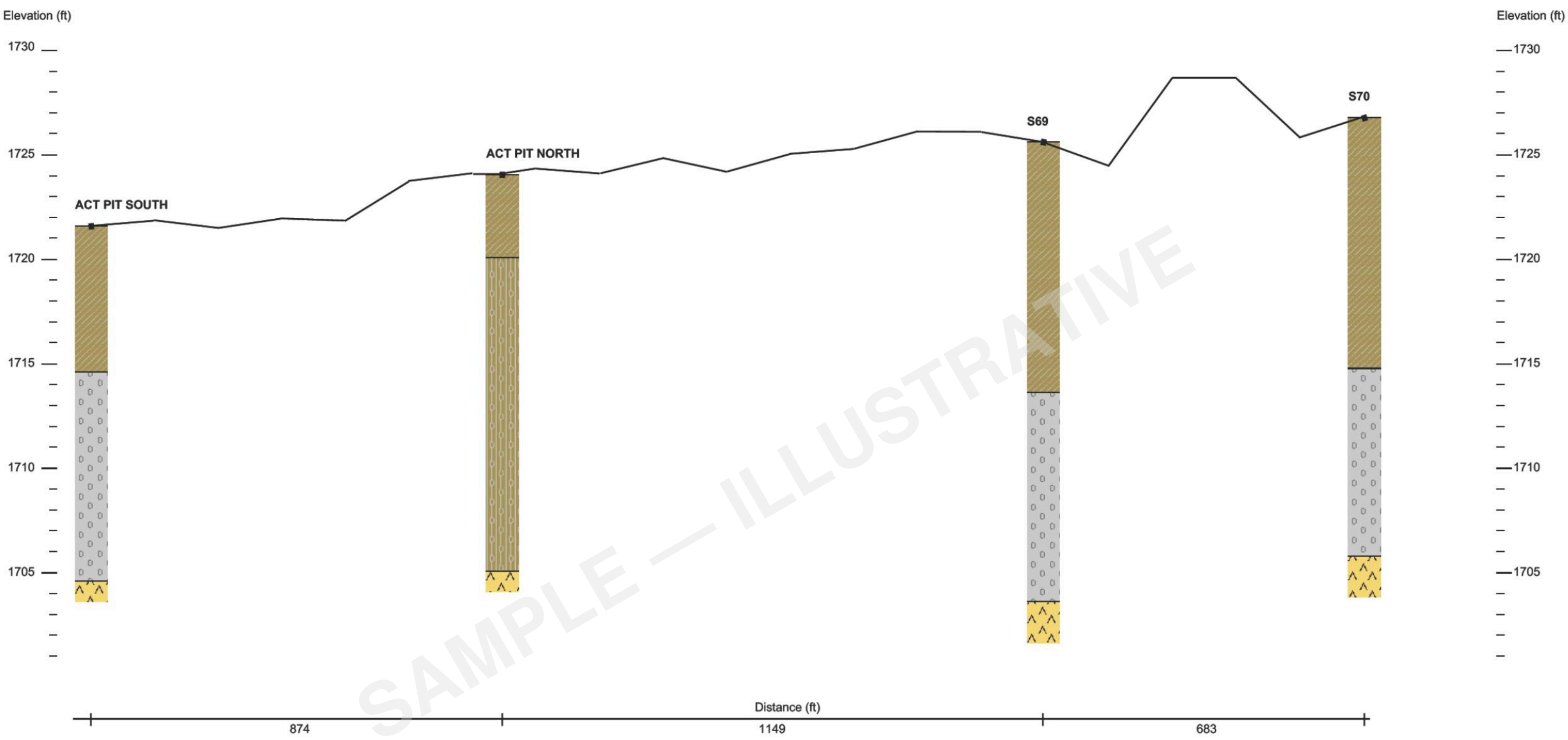
Year	Tons Sold	Margin/Ton	Cash Flow	Present Value
1	500,000	\$3.60	\$1,800,000	\$1,578,947
2	500,000	\$3.60	\$1,800,000	\$1,385,042
3	500,000	\$3.60	\$1,800,000	\$1,214,949
4	500,000	\$3.60	\$1,800,000	\$1,065,744
5	500,000	\$3.60	\$1,800,000	\$934,864
10	500,000	\$3.60	\$1,800,000	\$485,539
15	500,000	\$3.60	\$1,800,000	\$252,174
20	500,000	\$3.60	\$1,800,000	\$130,971

6.4 Royalty Cross-Check

Using an illustrative royalty of \$0.60 per ton over the same 20-year schedule and discounting at 14.0%, the royalty-method indication is approximately **\$2,000,000**, or \$0.20 per reserve ton.

7.0 Hypothetical Value Indication

The operator cash flow method indicates a rounded value of approximately **\$11,900,000** for the reserve-supported operating opportunity. The royalty cross-check indicates approximately **\$2,000,000** for a more limited mineral or royalty-style interest. These figures are not interchangeable because they measure different economic interests. A representative redacted geologic cross section is shown on the following page.



- Legend**
- Lean CLAY (CL)
 - Well-graded GRAVEL (GW)
 - BEDROCK
 - Well-graded GRAVEL with clay (GW-GC)

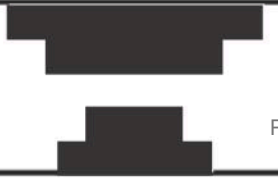
- Water Level During Drilling
- Water Level at End of Drilling
- Cap
- Screen
- Annular Seal
- Sanitary Seal
- Filter Pack
- Backfill

Horizontal scale: 80 feet
 Vertical scale: 5 feet

[Aerial overview redacted]



GEOLOGIC CROSS SECTION



8.0 Items Normally Required for a Reliance Valuation

A reliance-quality valuation engagement typically requires:

- Verified product pricing by gradation and customer class
- Actual historical production and cost records
- Permitting and environmental review
- Plant condition and capital requirement assessment
- Overburden stripping schedule and mine plan
- Comparable sales or royalty market support when available
- Sensitivity analysis for price, cost, production rate, discount rate, and recovery loss

9.0 Consultant Qualifications

Aggregate Consulting LLC is led by John M. Pitts, Jr., a fourth-generation aggregate industry professional with more than 36 years of direct ownership, design, construction, and operating experience in sand, gravel, crushed stone, and dredge-based operations. Experience includes dry-pit and dredge-fed plants, booster pumps, stripping, limestone crushing, greenfield site selection, deposit exploration, reserve evaluation, core drilling coordination, quality control, plant construction, process troubleshooting, and transaction due diligence. Mr. Pitts is a Professional Member of the Society for Mining, Metallurgy & Exploration (SME) and a member of the Texas Aggregates and Concrete Association (TACA).

Aggregate Consulting partners with **David Hale, Consulting Geologist and Geophysicist** (Wichita Falls, Texas), on engagements that require independent geologic interpretation, subsurface review, or geophysical methods. The combination of operator experience and independent geologic and geophysical interpretation is what supports reserve numbers that hold up under lender, auditor, and opposing-expert scrutiny.

The firm provides consulting support for operators, investors, lenders, attorneys, and construction-materials companies focused on aggregate, sand and gravel, limestone, and quarry operations nationwide.

Appendix A — DCF Sensitivity Table

Approximate operator cash flow value sensitivity to discount rate and net margin per ton, holding the 10-million-ton reserve and 500,000-ton annual production constant.

Discount Rate	\$2.50/ton	\$3.00/ton	\$3.60/ton	\$4.25/ton	\$5.00/ton
10.0%	\$10.6M	\$12.8M	\$15.3M	\$18.1M	\$21.3M
12.0%	\$9.3M	\$11.2M	\$13.4M	\$15.9M	\$18.7M
14.0%	\$8.3M	\$9.9M	\$11.9M	\$14.1M	\$16.6M
16.0%	\$7.4M	\$8.9M	\$10.7M	\$12.6M	\$14.8M
18.0%	\$6.7M	\$8.0M	\$9.6M	\$11.4M	\$13.4M

Highlighted cell (\$11.9M) is the base case used in Section 6.

Appendix B — Public Sample Redaction Notice

This sample intentionally excludes exact location maps, survey control, coordinates, client identity, complete borehole logs, and site-specific field notes. Those details may be appropriate in a confidential client report but are not appropriate for a public sample. All confidential engagements with Aggregate Consulting LLC are treated as confidential.