Assessment of the Volume Adequacy of Secondary Containment Structures of the Piñon Ridge Mill License Application

October 11, 2010

Introduction

Energy Fuels Resources Corp. reviewed the CH2MHILL preliminary drawings for adequacy of volumetric containment meeting or exceeding 110% of the largest process tank within the containment area.

Scope of Work

The scope of work of this report was limited to the assessment of the volumetric adequacy of the secondary containment structures of the Piñon Ridge Mill facility, as designed. Where secondary containment was found to be volumetrically inadequate, recommendations were made to render those containment structures adequate. Recommendations were limited to the extension of the height of the containment walls or curbs.

Containment Structures of the Piñon Ridge Mill Facility

Energy Fuels Resources Corp. prepared drawings and tables to summarize the volumetric adequacy of the containment structures of the Piñon Ridge Mill facility. Calculations were provided on those drawings. The containment structure drawings, calculations and tables were based on the general arrangement drawings of CH2MHILL and the foundation drawings of SM&RC.

Table 1 presents a list of these drawings, along with cross-references to the general arrangement and foundation drawings. The general arrangement drawings form the basis of this assessment.

Table 1 Drawings Used In Report and Referenced Drawings

Report Drawing	Containment Area*	Containment Area Designation (This Report)	"S" Drawings	"GA" Drawings
PM 10100-02	Area 100 / 200 Pulp Ore Storage and Pre-Leach Area	100-S-003-1	100-S-003	100-GA-003, 004
PM 10100-03	Area 100 / 200 Grinding And Leach Building	200-S-001-1	200-S-001	200-GA-001, 002
		200-S-001-2	200-S-001	200-GA-001, 002
PM 10100-04	Area 300 CCD Thickener Area	300-S-001-1	300-S-001, 002	300-GA-001, 002
		300-S-001-2	300-S-001, 002	300-GA-001, 002
		300-S-001-3	300-S-001, 002	300-GA-001, 002
		300-S-001-4	300-S-001, 002	300-GA-001, 002
PM 10100-05	Area 400 / 600 Solvent Extraction Building	400-S-001-1 / 600-S-001-1	400-S-001, 002	400-GA-001, 002
		400-S-001-2	400-S-001, 002	400-GA-001, 002
PM 10100-06	Area 400 / 600 Solvent Extraction Building	400-S-001-1 / 600-S-001-1	600-S-001, 002	600-GA-001, 002, 003
		400-S-001-3	600-S-001, 002	600-GA-001, 002, 003
PM 10100-07	Area 700 Precipitation and Packaging Building	500-S-001-1	500-S-001, 004	500-GA-003, 004, 005
PM 10100-08	Area 500 Precipitation and Packaging Building	500-S-002-1	500-S-002, 004	500-GA-002, 004, 005
PM 10100-09	Area 500 Precipitation and Thickening Building	500-S-003-1	500-S-003, 004	500-GA-001, 005, 006
		500-S-003-2	500-S-003, 004	500-GA-001, 005, 006
		500-S-003-3	500-S-003, 004	500-GA-001, 005, 006
		500-S-003-4	500-S-003, 004	500-GA-001, 005, 006
		500-S-003-5	500-S-003, 004	500-GA-001, 005, 006
		500-S-003-6	500-S-003, 004	500-GA-001, 005, 006
		500-S-003-7	500-S-003, 004	500-GA-001, 005, 006
		500-S-003-8	500-S-003, 004	500-GA-001, 005, 006
PM 10100-10	Area 800 Reagents, Kerosene and Sulfuric Acid Storage	800-S-001-1	800-S-001	500-GA-002
		800-GA-002-2		500-GA-002
PM 10100-11	Area 100 Diesel Storage and Emergency Generator	100-GA-001-1		100-GA-001
		100-GA-001-2		100-GA-001

*Note: Process areas defined by SM&RC

Methodology of Assessment

The first step of the assessment process involved calculating the volumes of the process vessels within the containment areas and identifying the largest tanks to be contained. Next, the maximum containment volumes and available containment volumes of the secondary containment structures were calculated.

Maximum containment area was calculated by first obtaining the area of the containment structure from plan dimensions. From this area, all areas of the superstructure support foundations within the containment area were subtracted. The resulting area was multiplied by the height of the containment wall or curb to obtain a volume. The maximum containment volume was then obtained by adding the containment sump volume to this volume.

Available containment volume was calculated by reducing the maximum containment volume by the volume of all entities situated within the containment area. Entities that reduced the maximum containment volume included equipment, equipment supports, equipment foundations, platform legs, stair and roof supports, and foundations of platforms, stairs and roofs. Rain-water volume, for containment structures located outside, also reduced the available containment volume.

It should be noted that the volume contained by the sloping floor area, from the bottom of the containment curb or wall to the top of the sump, was excluded from the maximum containment volume. This approach ensured that a simple but conservative approach to volume calculation would be utilized.

In the assessment of the volumetric adequacy of the containment structures, the available containment area was compared to 110% of the volume of the largest process tank within the containment area. The ratio of available containment area divided by 110% of the volume of the largest tank was defined as the “Containment Overage Factor” (COF).

Where the COF was equal to or greater than 1.0, the containment structure was assessed to be volumetrically adequate. A COF ratio equal to or greater than 1.0 indicated that the available volume of the containment area was sufficiently large to accommodate at least 110% of the volume of the largest tank within that containment area.

Where the COF was less than 1.0, the containment structure was assessed to be volumetrically inadequate. Recommendations to render the inadequate containment area adequate were then proposed. These recommendations involved extending the height of containment walls or curbs. These recommendations are presented in Table 3.

Assumptions and Definitions

- All foundation bases of equipment, process vessels, stairways and loading docks were assumed to be 1 foot in height, unless otherwise noted.

- The volume of small process vessels and equipment, used to reduce the available containment volume, was calculated by multiplying the base area by the containment wall height.

- For larger process vessels and equipment, the volume used to reduce the available containment volume was calculated by multiplying the base area by the height obtained by subtracting the foundation base from the height of the containment wall or curb.

- It was assumed that process equipment or vessels mounted on pedestals would not reduce the available containment volume. It was assumed that the volume of the vessel or piece of equipment was above the containment wall or curb. However, the volume of the pedestals supporting the vessel would reduce the available containment volume. The volume of these supports was conservatively calculated as the area of the support foundation multiplied by the height of the containment wall or curb.

- Sump pumps were assumed to have a constant volume of 8 cubic feet. This volume accounted for both solid and void space. No information was provided to obtain the volume of pumps directly. For stationary pumps, the volume of the pump unit was taken as the base area multiplied by a 3 foot height (minimum). This height also accounted for the foundation base. Where the containment wall height was less than 3 feet, the base area was multiplied by the containment wall height.

- For containment areas located outside, the available containment volume was reduced by rainfall. The design maximum storm event that the mill site would experience was 4.43" based on a 1,000 year, 24 hour duration storm (Golder, "Project Design Criteria", Golder Associates, Project title: "Piñon Ridge Geotechnical Services", Project Number 073-81694, January 15, 2008, page 4).

Assessment of the Volumetric Adequacy of Secondary Containment Structures

Each secondary containment structure was evaluated for volumetric adequacy. Using the COF as defined above, the containment area was assessed to be adequate if the COF was equal to or greater than one. Where this factor was less than one, the containment area was assessed to be volumetrically inadequate.

An “adequate” determination meant that the containment area was sufficient in volume to fully contain 110% of the volume of the largest tank within that structure. An “inadequate” determination meant that the volume of the containment structure was too small to fully contain 110% of the volume of the largest tank. Where the containment was found to be inadequate, a recommendation was given to render the inadequate containment adequate. Recommendations were limited to extending the containment wall or curb height to increase the available volume of the containment structure.

Volumetric calculations of the containment structures can be found on drawings PM 10100-02 through PM 10100-11. Table 2 presents a summary of the assessment of the volumetric adequacy of the secondary containment structures. Table 3 presents a summary of the recommendations of the height extensions of containment walls or curbs.

Table 2 Summary of the Volumetric Adequacy of Containment Structures

Drawing	Containment Area	Largest Tank (With Mechanical Equipment Ref. No.)	Preliminary Containment Wall or Curb Height (ft.)	Available Containment Volume (cu.ft.)	Largest Tank Volume (cu. ft.)	Avail. Cont. Vol., % of Largest Tank Vol.	Largest Tank Volume at 110% (cu. ft.)	Containment Overage Factor	Preliminary Volume Adequacy of Containment
PM 10100-02	100-S-003-1	Pulp Ore Storage Tank (130-TKH-01)	4.5	59,054	46,589	126.8%	51,248	1.15	Adequate
PM 10100-03	200-S-001-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	200-S-001-2	Leach Tank (220-TKL-03)	1.5	15,116	9,006	167.8%	9,906	1.53	Adequate
PM 10100-04	300-S-001-1	CCD Thickener (310-THK-05)	1.5**	10,285	13,613	75.5%	14,974	0.69	Inadequate
	300-S-001-2	CCD Thickener (310-THK-01)	1.5**	10,285	13,613	75.5%	14,974	0.69	Inadequate
	300-S-001-3	N/A	1.5	N/A	N/A	N/A	N/A	N/A	N/A
	300-S-001-4	Tailings Sump (320-SUP-01)	1.5	1,147	968	118.5%	1,065	1.08	Adequate
PM 10100-05	400-S-001-1 / 600-S-001-1	Vanadium Oxidation Tank (610-TKL-05)	1.0	46,920	9,837	477.0%	10,821	4.34	Adequate
	400-S-001-2	Uranium SX Feed Tank (420-TKH-01)	9.0	12,023	10,619	113.2%	11,680	1.03	Adequate
PM 10100-06	400-S-001-1 / 600-S-001-1	Same as in DWG PM 10100-5 above, a continuation of the same containment structure							
	400-S-001-3	Vanadium SX Feed Tank (640-TKH-02)	9.0	12,023	10,619	113.2%	11,680	1.03	Adequate
PM 10100-07	500-S-001-1	Vanadium Precipitation Tank (710-TKP-05)	1.0	4,844	1,336	362.6%	1,470	3.30	Adequate
PM 10100-08	500-S-002-1	Uranium Dryer (530-DR-01)	1.0	3,204	150	2,135.7%	165	19.42	Adequate
PM 10100-09	500-S-003-1	Ammonium Sulfate Storage Hopper (820-HPF-1)	11.5**	8,494	8,097	104.9%	8,907	0.95	Inadequate
	500-S-003-2	Sodium Chlorate Storage Tank (870-TKH-01)	8.5**	12,280	13,119	93.6%	14,431	0.85	Inadequate
	500-S-003-3	Ammonium Sulfate Solution Storage Tank (820-TKH-03)	1.0**	605	1,583	38.2%	1,742	0.35	Inadequate
	500-S-003-4	N/A	1.0	1,421	N/A	N/A	N/A	N/A	N/A
	500-S-003-5	Sodium Carbonate Slurry Storage Tank (840-TKH-01)	2.0**	1,246	3,534	35.3%	3,888	0.32	Inadequate
	500-S-003-6	Vanadium Precipitation Feed Tank (710-TKH-01)	1.0**	600	603	99.4%	664	0.90	Inadequate
	500-S-003-7	Uranium Thickener (510-THK-01)	1.0**	2,532	13,609	18.6%	14,970	0.17	Inadequate
	500-S-003-8	Return Water Storage Tank (910-TKH-02)	1.0	2,451	1,357	180.6%	1,493	1.64	Adequate
PM 10100-10	800-S-001-1	Sulfuric Acid Storage Tank (810-TKH-02)	5.0	22,399	17,241	129.9%	18,965	1.18	Adequate
	800-GA-002-2	Kerosene Storage Tank (860-TKH-01)	6.0**	5,031	5,089	98.9%	5,598	0.90	Inadequate
PM 10100-11	100-GA-001-1	Diesel Storage Tank (950-TKH-01)	5.0	15,028	13,572	110.7%	14,929	1.01	Adequate
	100-GA-001-2	Emergency Generator Day Tank (950-TKH-02)	N/A	Double Contained	3,600 gals	N/A	N/A	N/A	Adequate

Note: N/A – Not Applicable, assessment determined to be unnecessary

** Note: - Recommend Wall or curb height to be finalized during detailed engineering

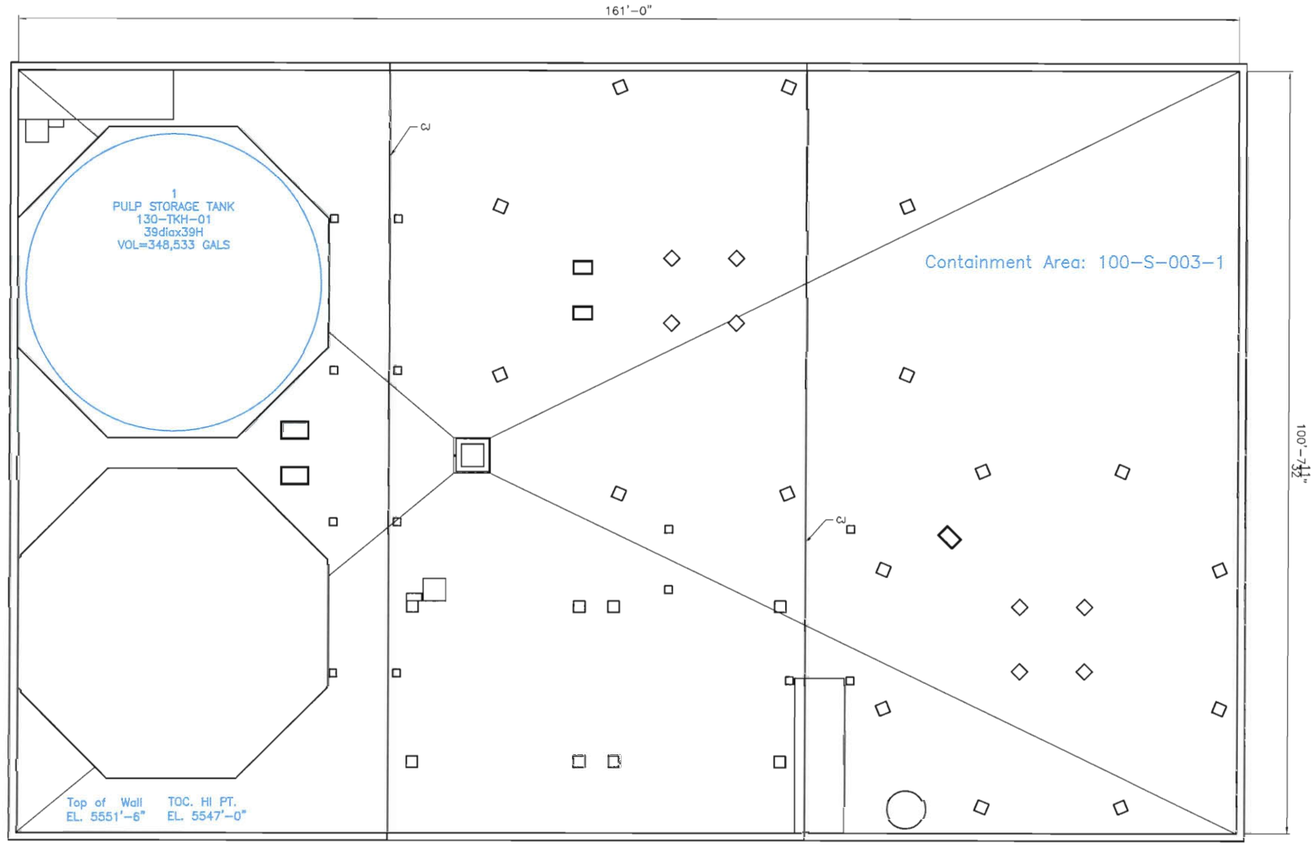
Table 3 Summary of the Recommendations to Achieve Volumetric Adequacy of Containment Structures

Drawing	Containment Area	Largest Tank (With Mechanical Equipment Ref. No.)	Preliminary Contain-ment Wall or Curb Height (ft.)	Preliminary Volume Adequacy of Contain-ment	Recommended Containment Wall or Curb Height (ft.)	Available Contain-ment Volume (cu.ft.)	Largest Tank Volume (cu. ft.)	Avail. Cont. Vol., % of Largest Tank Vol.	Largest Tank Volume at 110% (cu. ft.)	Contain-ment Overage Factor	Recommended Volume Adequacy of Contain-ment
PM 10100-02	100-S-003-1	Pulp Ore Storage Tank	4.5	Adequate	4.5	59,054	46,589	126.8%	51,248	1.15	Adequate
PM 10100-03	200-S-001-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	200-S-001-2	Leach Tank	1.5	Adequate	1.5	15,116	9,006	167.8%	9,906	1.53	Adequate
PM 10100-04	300-S-001-1 **	CCD Thickener	1.5**	Inadequate	2.5**	19,498	13,613	143.2%	14,974	1.30	Adequate
	300-S-001-2 **	CCD Thickener	1.5**	Inadequate	2.5**	19,498	13,613	143.2%	14,974	1.30	Adequate
	300-S-001-3	N/A	1.5	N/A	1.5	N/A	N/A	N/A	N/A	N/A	N/A
	300-S-001-4	Tailings Sump	1.5	Adequate	1.5	1,147	968	118.5%	1,065	1.08	Adequate
PM 10100-05	400-S-001-1 / 600-S-001-1	Vanadium Oxidation Tank	1.0	Adequate	1.0	46,920	9,837	477.0%	10,821	4.34	Adequate
	400-S-001-2	Uranium SX Feed	9.0	Adequate	9.0	12,023	10,619	113.2%	11,680	1.03	Adequate
PM 10100-06	400-S-001-1 / 600-S-001-1	Same as in DWG PM 10100-5 above, a continuation of the same containment structure									
	400-S-001-3	Vanadium SX Feed Tank	9.0	Adequate	9.0	12,023	10,619	113.2%	11,680	1.03	Adequate
PM 10100-07	500-S-001-1	Vanadium Precipitation Tank	1.0	Adequate	1.0	4,844	1,336	362.6%	1,470	3.30	Adequate
PM 10100-08	500-S-002-1	Uranium Dryer	1.0	Adequate	1.0	3,204	150	2,135.7%	165	19.42	Adequate
PM 10100-09	500-S-003-1	Ammonium Sulfate Storage Hopper	11.5**	Inadequate	12.5**	9,256	8,097	114.3%	8,907	1.04	Adequate
	500-S-003-2	Sodium Chlorate Storage Tank	8.5**	Inadequate	10.5**	15,462	13,119	117.9%	14,431	1.07	Adequate
	500-S-003-3	Ammonium Sulfate Solution Storage Tank	1.0**	Inadequate	3.0**	2,056	1,583	129.9%	1,742	1.18	Adequate
	500-S-003-4	N/A	1.0	N/A	1.0	1,421	N/A	N/A	N/A	N/A	N/A
	500-S-003-5	Sodium Carbonate Slurry Storage Tank	2.0**	Inadequate	5.0**	4,117	3,534	116.5%	3,888	1.06	Adequate
	500-S-003-6	Vanadium Precipitation Feed Tank	1.0**	Inadequate	1.5**	934	603	154.8%	664	1.41	Adequate
	500-S-003-7	Uranium Thickener	1.0**	Inadequate	6.0**	15,670	13,609	115.1%	14,970	1.05	Adequate
	500-S-003-8	Return Water Storage Tank	1.0	Adequate	1.0	2,451	1,357	180.6%	1,493	1.64	Adequate
PM 10100-10	800-S-001-1	Sulfuric Acid Storage Tank	5.0	Adequate	5.0	22,399	17,241	129.9%	18,965	1.18	Adequate
	800-GA-002-2	Kerosene Storage	6.0**	Inadequate	7.0**	5,983	5,089	117.6%	5,598	1.07	Adequate
PM 10100-11	100-GA-001-1	Diesel Storage Tank	5.0	Adequate	5.0	15,028	13,572	110.7%	14,929	1.01	Adequate
	100-GA-001-2	Emergency Generator Day Tank	N/A	Adequate	N/A	Double Contained	3,600 gals	N/A	N/A	N/A	Adequate

Note: N/A – Not Applicable, assessment determined to be unnecessary

** Note: - Recommend Wall or curb height to be finalized during detailed engineering

Drawing No. PM 10100-02 1/1



Containment Area 100-S-003-1 Pulp Storage And Pre-Leach Containment
Largest Tank: (1) Pulp Storage Tank, 130-TKH-01
Vol = 46,589 cu.ft.
Vol at 110% = 51,248 cu.ft.

Containment: Outside, Rainfall – 4.43" (1000 yr, 24 event)		
Area: 161' x 100'-7'-11/32"	=	16,198.5 sq.ft.
less wall fdn's	=	0.0
Containment Area	=	16,198.5 sq.ft.
Wall Ht. (5551.5-5547.0)	=	4.5 ft.
Containment Volume	=	72,893.4 cu.ft.
+ Sump Volume(3x3x3)	=	27.0 cu.ft.
Total Containment Volume	=	72,920.4 cu.ft.
– rainfall at 4.43"	=	5,980.0 cu.ft.
– 1 sump pump	=	8.0 cu.ft.
– 2 Tank Base (1,392.6 sq.ft.x1')	=	2,785.2 cu.ft.
– 1 Tank Base (19.6 sq.ft.x1')	=	19.6 cu.ft.
– 1 Tank (1,194.6 sq.ft.x3.5')	=	4,181.1 cu.ft. Note 1
– 1 Tank (12.6 sq.ft.x3.5')	=	44.1 cu.ft.
– 2 pumps+bases (8.0 sq.ft. x 3.5')	=	56.0 cu.ft.
– 2 pumps+bases (4.2 sq.ft. x 3.5')	=	29.4 cu.ft.
– 1 pump+base (4.2 sq.ft. x 3.5')	=	14.7 cu.ft.
– 2 Stair Bases (133.2sq.ft.x1')	=	266.4 cu.ft
– 24 Tank Pedestals (2.25 sq.ft.x4.5')	=	243.0 cu.ft.
– 8 Pipe-Run Pedestals (1sq.ft. x 4.5')	=	36.0 cu.ft.
– 8 Platform Pedestals (2.25 sq.ft.x4.5')	=	81.0 cu.ft.
– 5 Other Pedestals (1 sq.ft. x 4.5')	=	22.5 cu.ft.
– 2 Utility Stations (11 sq.ft.x4.5')	=	99.0 cu.ft.
Avail Containment Volume	=	59,054.4 cu.ft.
Avail Containment	=	59,054.4 cu.ft.
Largest Tank (at 110%)	=	51,248.0 cu.ft.
Difference	=	7,806.4 cu.ft.
Containment Overage factor		1.15
Avail. Containment Vol., % of Largest Tank Vol.		126.8%

Note 1 – The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO LICENSED
BRUCE LAWRENCE NORQUIST
28806
10-14
PROFESSIONAL ENGINEER
Bruce L. Norquist
Registered Professional Engineer
No. 28806

NOTES	LEGEND
Notes –Note 1: Drawing May Not Be Printed To Scale. –Note 2: Ref Dwg 100-S-003, SMRC Dwg Set. –Note 3: Ref Dwg 100-GA-003, CH2MHill Dwg Set. –Note 4: Ref Dwg 100-GA-004, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

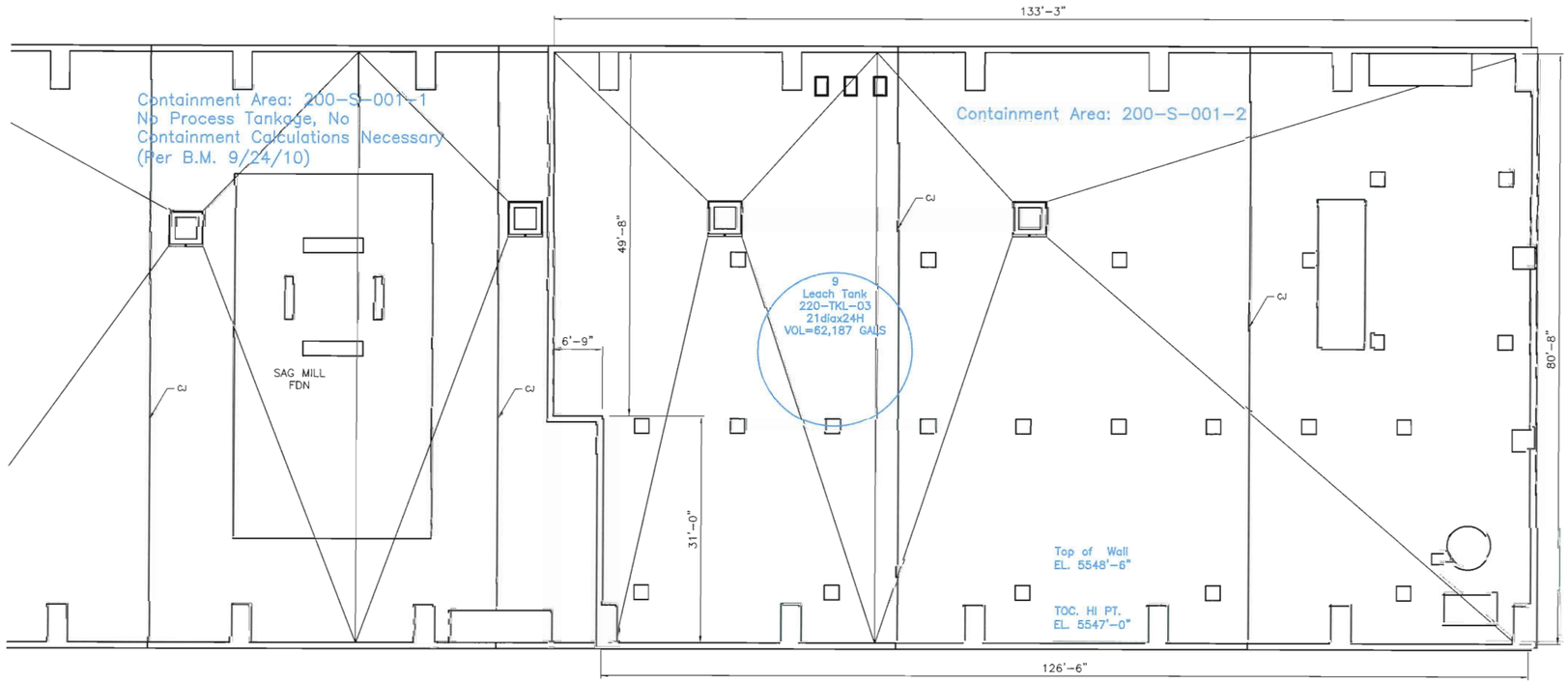
Scale 1"=20'

ENERGY FUELS RESOURCES CORP.

Title
Volume Calculations
Area 100 - Pulp Ore Storage and Pre-Leaching

Dwg.No.: PM 10100-02 Pg. 1 of 1

Drawing No. PM 10100-03 1/1



Containment Area 200-S-001-2 Leaching Containment Area
Largest Tank: (9) Leach Tank, 220-TKL-03

Vol	= 8,313	cu.ft.
+ 2' Siphon Head (346.4sq.ft.x2')	= 692.8	cu.ft.
Vol at 110%	= 9,906.4	cu.ft.

Containment: Inside, No Rainfall – 4.43" (1000 yr, 24 event)

Area: (133'-3"x80'-8")-(31'x6'-9")	= 10,539.6	sq.ft.
less wall fdn's (13.78x9+11.25*2+10.33+7.03*2+61.83)	= 232.7	sq.ft.
Containment Area	= 10,306.9	sq.ft.
Wall Ht. (5548.5-5547.0)	= 1.5	ft.
Containment Volume	= 15,460.4	cu.ft.
+ Sump Volume(3x3x3)x2	= 54.0	cu.ft.
Total Containment Volume	= 15,514.4	cu.ft.
– No rainfall at 4.43"	= 0.0	cu.ft.
– 2 sump pumps	= 16.0	cu.ft.
– 0 Tank Bases (0 sq.ft.x1')	= 0.0	cu.ft.
– 1 Tank+Base (28.3sq.ft.x1.5')	= 42.5	cu.ft.
– 1 Tank+base (30.3sq.ft.x1.5')	= 45.5	cu.ft. Note 1
– 1 Tank+base (3.7sq.ft.x1.5')	= 5.6	cu.ft.
– 1 pump+base (3.2 sq.ft.x1.5')	= 4.8	cu.ft.
– 3 pumps+bases (4.2sq.ft.x1.5')	= 18.9	cu.ft.
– 1 Stair Base (133.3sq.ft.x1')	= 133.3	cu.ft
– 22 Tank Pedestals (4.0sq.ft.x1.5')	= 132.0	cu.ft.
– 0 Utility Stations (0.0sq.ft.x1.5')	= 0.0	cu.ft.
Avail Containment Volume	= 15,115.8	cu.ft.
Avail Containment	= 15,115.8	cu.ft.
Largest Tank (at 110%)	= 9,906.4	cu.ft.
Difference	= 5,209.4	cu.ft.
Containment Overage factor	1.53	
Avail Containment Vol., % of Largest Tank Vol.	167.8%	

Note 1 – The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

BRUCE LAWRENCE NORQUIST
28806
10-14-10
PROFESSIONAL ENGINEER
STATE OF UTAH

Bruce L. Norquist
Reg. Prof. Engineer
No. 28806

NOTES	LEGEND
Notes –Note 1: Drawing May Not Be Printed To Scale. –Note 2: Ref Dwg 200–S–001, SMRC Dwg Set. –Note 3: Ref Dwg 200–GA–001, CH2MHill Dwg Set. –Note: 4: Ref Dwg 200–GA–002, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

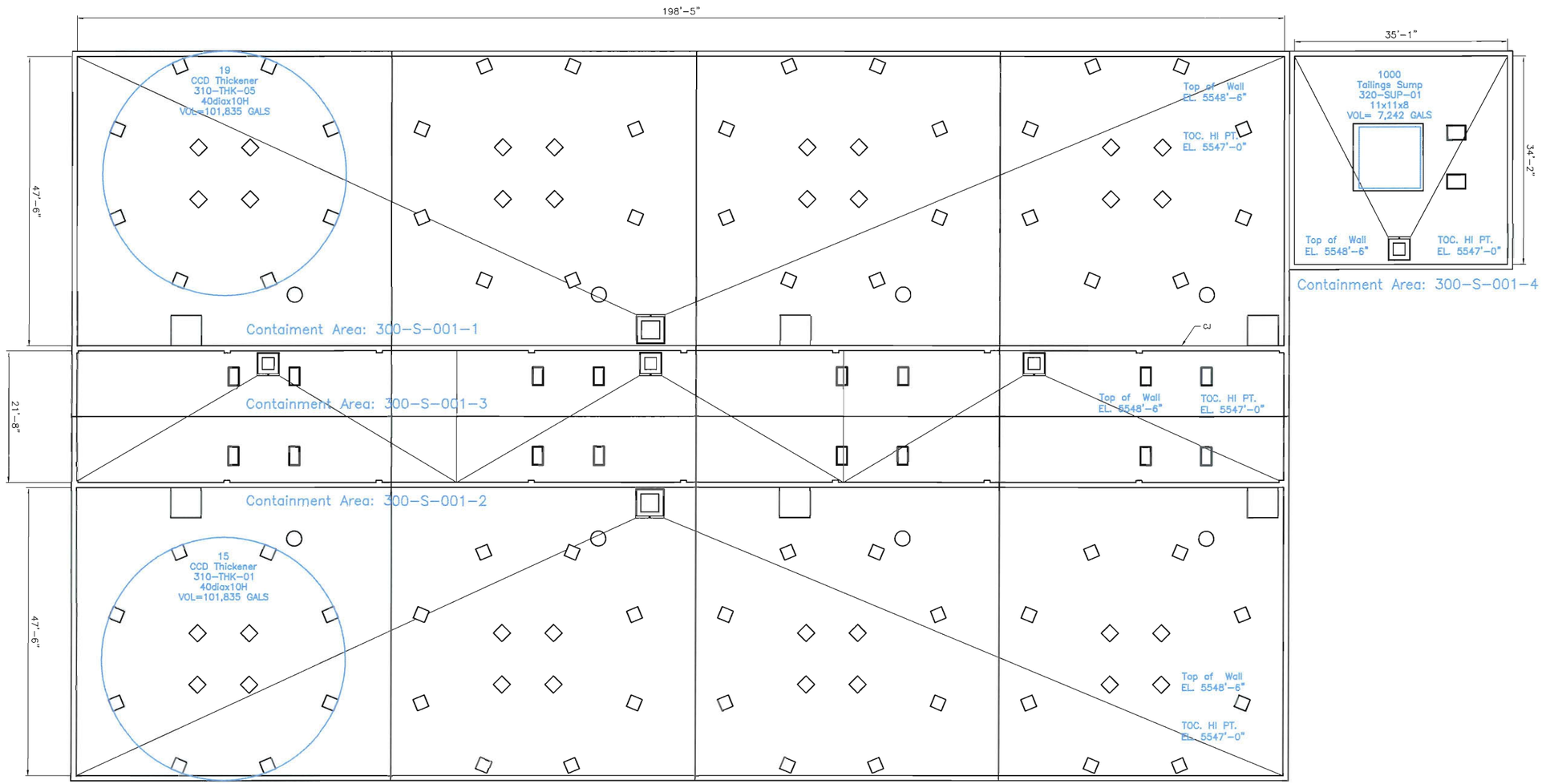
Scale 1"=20'

ENERGY FUELS RESOURCES CORP.

Title
Volume Calculations
Area 100 / 200 Grinding and Leaching

Dwg.No.: PM 10100-03 Pg. 1 of 1

Drawing No. PM 10100-04 1/2



I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO LICENSED
BRUCE LAWRENCE NORQUIST
28806
PROFESSIONAL ENGINEER
10-14

Bruce L. Norquist
Reg. Prof. Engineer
No. 28806

NOTES	LEGEND	DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
Notes -Note 1: Drawing May Not Be Printed Too Scale. -Note 2: Ref Dwg 300-S-001, SMRC Dwg Set. -Note 3: Ref Dwg 300-S-002, SMRC Dwg Set. -Note 4: Ref Dwg 300-GA-001, CH2MHill Dwg Set. -Note 5: Ref Dwg 300-GA-002, CH2MHill Dwg Set.		DRAWN BY: BLN		09/14/10	

Scale 1"=20'

ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations
Area 300 CCD Thickeners

Dwg.No.: PM 10100-04 | Pg. 1 of 2

Drawing No. PM 10100-04 2/2

Containment Area: 300-S-003-1 CCD Thickener Containment
Largest Tank: (19) CCD Thickener, 310-THK-05
Vol = 13,613 cu.ft.
Vol at 110% = 14,974 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)		
Area: 198'-5" x 47'-6"	=	9,424.8 sq.ft.
less wall fdn's	=	0.0
Containment Area	=	9,424.8 sq.ft.
Wall Ht. (5548.5-5547.0)	=	1.5 ft.
Containment Volume	=	14,137.2 cu.ft.
+ Sump Volume(3x3x3)	=	27.0 cu.ft.
Total Containment Volume	=	14,164.2 cu.ft.
- rainfall at 4.43"	=	3,479.3 cu.ft.
- 1 sump pump	=	8.0 cu.ft.
- 4 Tanks+bases (4.9sq.ft.x1.5')	=	29.4 cu.ft. Note 1
- 0 pumps+bases (0.0 sq.ft. x 1.5')	=	0.0 cu.ft.
- 3 Step Bases (25.0sq.ft.x1')	=	75.0 cu.ft
- 48 Tank Pedestals (4.0 sq.ft.x1.5')	=	288.0 cu.ft.
- 0 Utility Stations (0.0sq.ft.x1.5')	=	0.0 cu.ft.
Avail Containment Volume	=	10,284.5 cu.ft.
Avail Containment	=	10,284.5 cu.ft.
Largest Tank (at 110%)	=	14,974.0 cu.ft.
Difference	=	-4,689.5 cu.ft.
Containment Overage factor		0.69
Avail Containment Vol., % of Largest Tank Vol.		75.5%

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements, "All to be verified or modified at final design stage"

Containment Area: 300-S-003-2 CCD Thickener Containment
Largest Tank: (15) CCD Thickener, 310-THK-01
Vol = 13,613 cu.ft.
Vol at 110% = 14,974 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)		
Area: 198'-5" x 47'-6"	=	9,424.8 sq.ft.
less wall fdn's	=	0.0
Containment Area	=	9,424.8 sq.ft.
Wall Ht. (5548.5-5547.0)	=	1.5 ft.
Containment Volume	=	14,137.2 cu.ft.
+ Sump Volume(3x3x3)	=	27.0 cu.ft.
Total Containment Volume	=	14,164.2 cu.ft.
- rainfall at 4.43"	=	3,479.3 cu.ft.
- 1 sump pump	=	8.0 cu.ft.
- 4 Tanks+bases (4.9sq.ft.x1.5')	=	29.4 cu.ft. Note 1
- 0 pumps+bases (0.0 sq.ft. x 1.5')	=	0.0 cu.ft.
- 3 Step Bases (25.0sq.ft.x1')	=	75.0 cu.ft
- 48 Tank Pedestals (4.0 sq.ft.x1.5')	=	288.0 cu.ft.
- 0 Utility Stations (0.0sq.ft.x1.5')	=	0.0 cu.ft.
Avail Containment Volume	=	10,284.5 cu.ft.
Avail Containment	=	10,284.5 cu.ft.
Largest Tank (at 110%)	=	14,974.0 cu.ft.
Difference	=	-4,689.5 cu.ft.
Containment Overage factor		0.69
Avail Containment Vol., % of Largest Tank Vol.		75.5%

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements, "All to be verified or modified at final design stage"

Containment Area: 300-S-003-3 CCD Thickener Containment- Pump Area
Largest Tank: No Process Tanks
Vol = N/A
Vol at 110% = N/A

Containment: Inside, No Rainfall - 4.43" (1000 yr, 24 event)		
Area: 198'-5" x 21'-8"	=	4,299.0 sq.ft.
less wall fdn's (0.33x14+0.25x2+0.08x2)	=	5.3
Containment Area	=	4,293.7 sq.ft.
Wall Ht. (5548.5-5547.0)	=	1.5 ft.
Containment Volume	=	6,440.6 cu.ft.
+ Sump Volume(2x2x2)x3	=	24.0 cu.ft.
Total Containment Volume	=	6,464.6 cu.ft.
- No rainfall at 4.43"	=	0.0 cu.ft.
- 3 sump pump	=	24.0 cu.ft.
- 0 Tanks+bases (0.0sq.ft.x1.5')	=	0.0 cu.ft. Note 1
- 16 pumps+bases (4.9 sq.ft. x 1.5')	=	117.6 cu.ft.
Avail Containment Volume	=	6,323.0 cu.ft.

Note 1 - The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

Containment Area: 300-S-003-4 Tailings Sump Containment
Largest Tank: (1000) Tailings Sump, 320-SUP-01
Vol = 968 cu.ft.
Vol at 110% = 1,064.8 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)		
Area: 35'-1" x 34'-2"	=	1,198.7 sq.ft.
less wall fdn's	=	0.0
Containment Area	=	1,198.7 sq.ft.
Wall Ht. (5548.5-5547.0)	=	1.5 ft.
Containment Volume	=	1,798.0 cu.ft.
+ Sump Volume(2x2x2)	=	8.0 cu.ft.
Total Containment Volume	=	1,806.0 cu.ft.
- rainfall at 4.43"	=	442.5 cu.ft.
- 1 sump pump	=	8.0 cu.ft.
- 1 Tank Base (126.5sq.ft.x1.0')	=	126.5 cu.ft. Note 1
- 1 Tank (121 sq.ft. x 0.5')	=	60.5 cu.ft.
- 2 Pumps+Bases (7.2sq.ft.x1.5')	=	21.6 cu.ft
- 0 Utility Stations (0.0sq.ft.x1.5')	=	0.0 cu.ft.
Avail Containment Volume	=	1,146.9 cu.ft.
Avail Containment	=	1,146.9 cu.ft.
Largest Tank (at 110%)	=	1,064.8 cu.ft.
Difference	=	82.1 cu.ft.
Containment Overage factor		1.08
Avail Containment Vol., % of Largest Tank Vol.		118.5%

Note 1 - The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO REGISTERED BRUCE LAWRENCE NORQUIST 28806 PROFESSIONAL ENGINEER

10-14-10

Bruce L. Norquist
Reg. Prof. Engineer
No. 28806

NOTES	LEGEND
Notes -Note 1: Drawing May Not Be Printed To Scale. -Note 2: Ref Dwg 300-S-001, SMRC Dwg Set. -Note 3: Ref Dwg 300-S-002, SMRC Dwg Set. -Note 4: Ref Dwg 300-GA-001, CH2MHill Dwg Set. -Note 5: Ref Dwg 300-GA-002, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

Scale N/A

ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations Area 300 CCD Thickeners

Dwg.No.: PM 10100-04 Pg. 2 of 2

Drawing No. PM 10100-05 1/1

Containment Area 400-S-001-1 / 600-S-001-1
Solvent Extraction Building
(West-Uranium SX And East Vanadium SX And Oxidation)
Largest Tank: (59) Vanadium Oxidation Tank, 610-TKL-05
Vol = 9,837 cu.ft.
Vol at 110% = 10,821 cu.ft.

Containment: Inside, No Rainfall - 4.43" (1000 yr, 24 event)			
Area: 371'-2" x 141'-2"	=	52,396.4	sq.ft.
less wall fdn's (20+20+5+7)x4sq.ft.	=	208.0	sq.ft.
less step pads (2)x56sq.ft.	=	112.0	sq.ft.
Containment Area	=	52,076.4	sq.ft.
Wall Ht. (5545.0-5544.0)	=	1.0	ft.
Containment Volume	=	52,076.4	cu.ft.
+ 2 Sump Volumes (4x4x4)	=	128.0	cu.ft.
Total Containment Volume	=	52,204.4	cu.ft.
- No rainfall at 4.43"	=	0.0	cu.ft.
- 2 sump pump	=	16.0	cu.ft.
- 2 Tank Base (401.0 sq.ft.x1')	=	802.0	cu.ft.
- 2 Tank Base (36.9 sq.ft.x1')	=	73.8	cu.ft.
- 4 Tank Bases (649.5sq.ft.x1')	=	2,598.0	cu.ft.
- 1 Tank Base (162.4sq.ft.x1')	=	162.4	cu.ft.
- 1 Tank Base (91.3sq.ft. x 1')	=	91.3	cu.ft.
- 1 Tank+Base (36.0sq.ft.x1.0')	=	36.0	cu.ft. Note 1
- 1 Tank+Base (187.1 sq.ft.x1.0')	=	187.1	cu.ft.
- 1 Tank+Base (16.0sq.ft.x1')	=	16.0	cu.ft.
- 18 pumps+bases (12.0 sq.ft. x 1.0')	=	216.0	cu.ft.
- 8 pumps+bases (14.6 sq.ft. x 1.0')	=	116.8	cu.ft.
- 4 pumps+bases (19.1 sq.ft. x 1.0')	=	76.4	cu.ft.
- 6 pumps+bases (15.4sq.ft.x1')	=	92.4	cu,ft.
- 2 pumps+bases (4.4sq.ft.x1')	=	8.8	cu.ft.
- 1 pump+base (3.5sq.ft.x1')	=	3.5	cu.ft.
- 1 pump+base (5.5sq.ft.x1')	=	5.5	cu.ft.
- 3 Stair Bases (47.7sq.ft.x1')	=	143.1	cu.ft
- 1 Stair Base (53.7sq.ft.x1')	=	53.7	cu.ft.
- 4 Platform Legs (1.5sq.ft. x 1')	=	6.0	cu.ft.
- 145 Tank and Platform Pedestals (4.0sq.ft.x1.0')	=	580.0	cu.ft.
Avail Containment Volume	=	46,919.6	cu.ft.
Avail Containment	=	46,919.6	cu.ft.
Largest Tank (at 110%)	=	10,821.0	cu.ft.
Difference	=	36,098.6	cu.ft.
Containment Overage factor		4.34	
Avail Containment Vol., % of Largest Tank Vol.		477.0%	

Note 1 - The largest tank volume is not a deduction

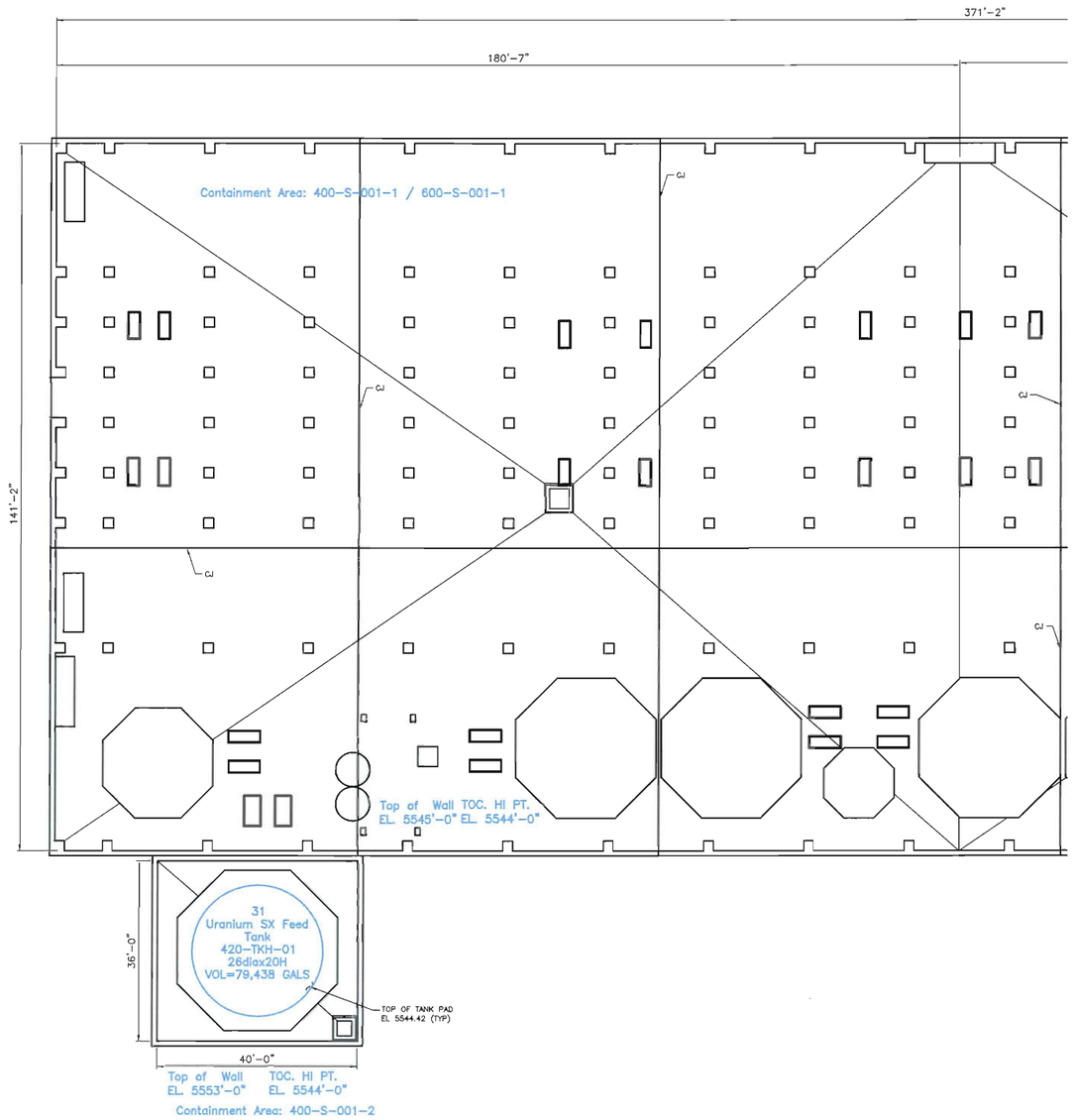
General Note: "All to be verified or modified at final design stage"

Containment Area 400-S-001-2
Solvent Extraction Building - Uranium SX Feed Tank Area
Largest Tank: (31) Uranium SX Feed Tank, 420-TKH-01
Vol = 10,619 cu.ft.
Vol at 110% = 11,680 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)			
Area: 36' x 40'	=	1,440.0	sq.ft.
less wall fdn's (0)x0sq.ft.	=	0.0	sq.ft.
Containment Area	=	1,440.0	sq.ft.
Wall Ht. (5553.0-5544.0)	=	9.0	ft.
Containment Volume	=	12,960.0	cu.ft.
+ 1 Sump Volume (3x3x3)	=	27.0	cu.ft.
Total Containment Volume	=	12,987.0	cu.ft.
- rainfall at 4.43"	=	531.6	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 1 Tank Base (848.3 sq.ft.x0.5')	=	424.2	cu.ft. Note 2
- 1 Tank (530.9sq.ft.x0.0')	=	0.0	cu.ft. Note 1
Avail Containment Volume	=	12,023.2	cu.ft.
Avail Containment	=	12,023.2	cu.ft.
Largest Tank (at 110%)	=	11,680.0	cu.ft.
Difference	=	343.2	cu.ft.
Containment Overage factor		1.03	
Avail Containment Vol., % of Largest Tank Vol.		113.2%	

Note 1 - The largest tank volume is not a deduction
Note 2 - Dwg 400-S-001 Shows the tank pad at 0.42' (5").
Conservatively, this calculation used 0.5' (6")

General Note: "All to be verified or modified at final design stage"



I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application, formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO LICENSED
BRUCE LAWRENCE NORQUIST
28806
10-1K-10
PROFESSIONAL ENGINEER

Bruce L. Norquist
Prof. Civil Engineer
No. 28806

NOTES	LEGEND
Notes --Note 1: Drawing May Not Be Printed To Scale. --Note 2: Ref Dwg 400-S-001, SMRC Dwg Set. --Note 3: Ref Dwg 400-S-002, SMRC Dwg Set. --Note 4: Ref Dwg 400-GA-001, CH2MHill Dwg Set. --Note: 5: Ref Dwg 400-GA-002, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

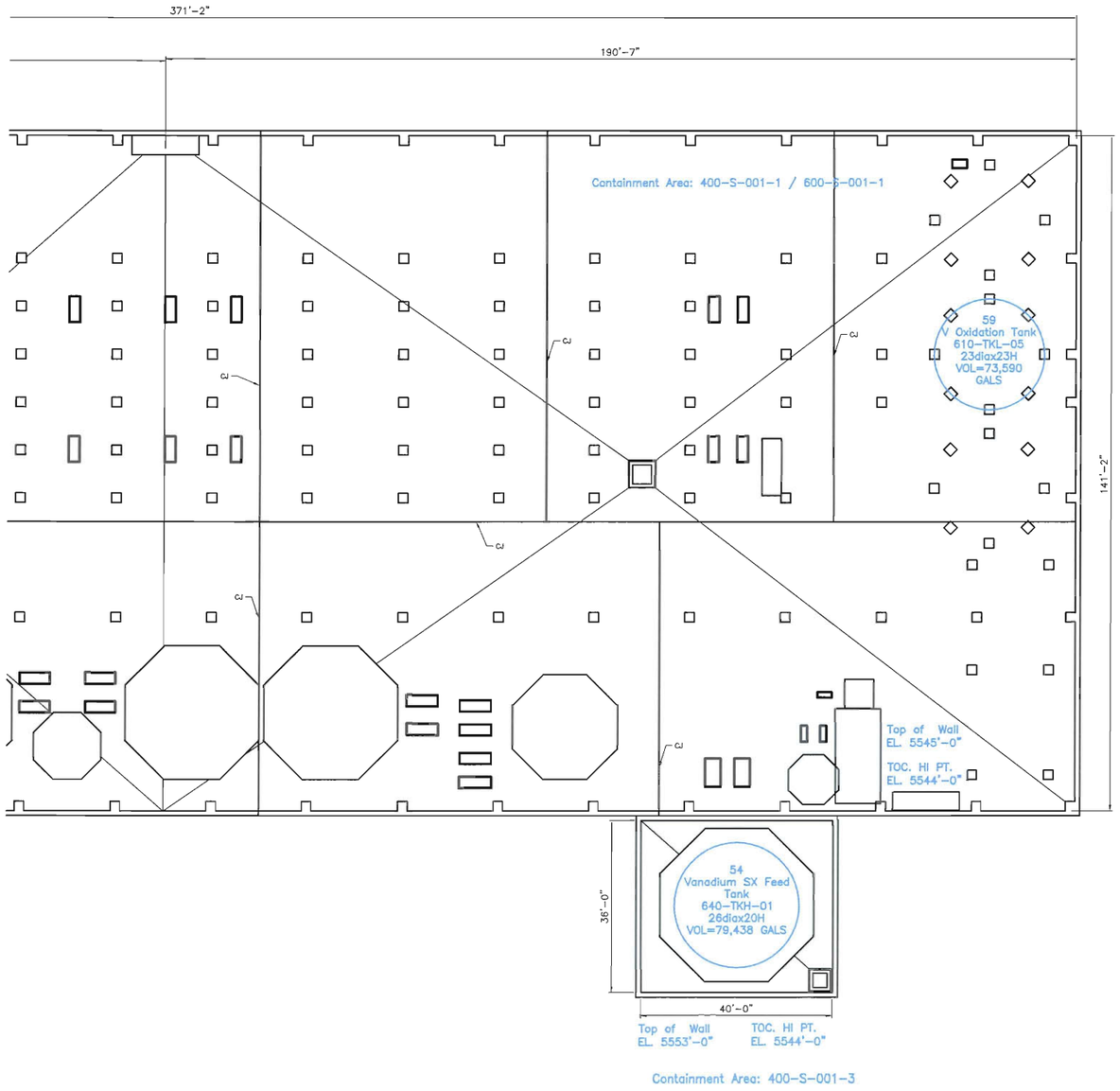
Scale 1"=30'

ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations
Area 400 Solvent Extraction Building West

Dwg.No.: PM 10100-05 Pg. 1 of 1

Drawing No. PM 10100-06 1/1



Containment Area 400-S-001-1 / 600-S-001-1
Solvent Extraction Building
(West-Uranium SX And East Vanadium SX And Oxidation)
Largest Tank: (59) Vanadium Oxidation Tank, 610-TKL-05
Vol = 9,837 cu.ft.
Vol at 110% = 10,821 cu.ft.

Containment: Inside, No Rainfall - 4.43" (1000 yr, 24 event)		
Area: 371'-2" x 141'-2"	=	52,396.4 sq.ft.
less wall fdn's (20+20+5+7)x4sq.ft.	=	208.0 sq.ft.
less step pads (2)x56sq.ft.	=	112.0 sq.ft.
Containment Area	=	52,076.4 sq.ft.
Wall Ht. (5545.0-5544.0)	=	1.0 ft.
Containment Volume	=	52,076.4 cu.ft.
+ 2 Sump Volumes (4x4x4)	=	128.0 cu.ft.
Total Containment Volume	=	52,204.4 cu.ft.
- No rainfall at 4.43"	=	0.0 cu.ft.
- 2 sump pump	=	16.0 cu.ft.
- 2 Tank Base (401.0 sq.ft.x1')	=	802.0 cu.ft.
- 2 Tank Base (36.9 sq.ft.x1')	=	73.8 cu.ft.
- 4 Tank Bases (649.5sq.ft.x1')	=	2,598.0 cu.ft.
- 1 Tank Base (162.4sq.ft.x1')	=	162.4 cu.ft.
- 1 Tank Base (91.3sq.ft. x 1')	=	91.3 cu.ft.
- 1 Tank+Base (36.0sq.ft.x1.0')	=	36.0 cu.ft. Note 1
- 1 Tank+Base (187.1 sq.ft.x1.0')	=	187.1 cu.ft.
- 1 Tank+Base (16.0sq.ft.x1')	=	16.0 cu.ft.
- 18 pumps+bases (12.0 sq.ft. x 1.0')	=	216.0 cu.ft.
- 8 pumps+bases (14.6 sq.ft. x 1.0')	=	116.8 cu.ft.
- 4 pumps+bases (19.1 sq.ft. x 1.0')	=	76.4 cu.ft.
- 6 pumps+bases (15.4sq.ft.x1')	=	92.4 cu,ft.
- 2 pumps+bases (4.4sq.ft.x1')	=	8.8 cu.ft.
- 1 pump+base (3.5sq.ft.x1')	=	3.5 cu.ft.
- 1 pump+base (5.5sq.ft.x1')	=	5.5 cu.ft.
- 3 Stair Bases (47.7sq.ft.x1')	=	143.1 cu.ft
- 1 Stair Base (53.7sq.ft.x1')	=	53.7 cu.ft.
- 4 Platform Legs (1.5sq.ft. x 1')	=	6.0 cu.ft.
- 145 Tank and Platform Pedestals (4.0sq.ft.x1.0')	=	580.0 cu.ft.
Avail Containment Volume	=	46,919.6 cu.ft.
Avail Containment	=	46,919.6 cu.ft.
Largest Tank (at 110%)	=	10,821.0 cu.ft.
Difference	=	36,098.6 cu.ft.
Containment Overage factor		4.34
Avail Containment Vol., % of Largest Tank Vol.		477.0%

Note 1 - The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

Containment Area 400-S-001-3
Solvent Extraction Building - Vanadium SX Feed Tank Area
Largest Tank: (54) Vanadium SX Feed Tank, 640-TKH-01
Vol = 10,619 cu.ft.
Vol at 110% = 11,680 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)		
Area: 36' x 40'	=	1,440.0 sq.ft.
less wall fdn's (0)x0sq.ft.	=	0.0 sq.ft.
Containment Area	=	1,440.0 sq.ft.
Wall Ht. (5553.0-5544.0)	=	9.0 ft.
Containment Volume	=	12,960.0 cu.ft.
+ 1 Sump Volume (3x3x3)	=	27.0 cu.ft.
Total Containment Volume	=	12,987.0 cu.ft.
- rainfall at 4.43"	=	531.6 cu.ft.
- 1 sump pump	=	8.0 cu.ft.
- 1 Tank Base (848.3 sq.ft.x0.5')	=	424.2 cu.ft. Note 2
- 1 Tank (530.9sq.ft.x0.0')	=	0.0 cu.ft. Note 1
Avail Containment Volume	=	12,023.2 cu.ft.
Avail Containment	=	12,023.2 cu.ft.
Largest Tank (at 110%)	=	11,680.0 cu.ft.
Difference	=	343.2 cu.ft.
Containment Overage factor		1.03
Avail Containment Vol., % of Largest Tank Vol.		113.2%

Note 1 - The largest tank volume is not a deduction
Note 2 - Dwg 400-S-001 shows a tank base thickness of 5" (TYP.) for the Uranium SX Feed Tank. Because of the use of "(TYP.)" and the identical characteristics of the Vanadium SX Feed Tank and containment, the tank base for this containment is also taken at 0.5 ft.

General Note: "All to be verified or modified at final design stage"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO LICENSED
BRUCE LAWRENCE NORQUIST
28806
PROFESSIONAL ENGINEER
10-14-10

Bruce L. Norquist
Reg. Prof. Engineer
No. 28806

NOTES	LEGEND
Notes -Note 1: Drawing May Not Be Printed To Scale. -Note 2: Ref Dwg 600-S-001, SMRC Dwg Set. -Note 3: Ref Dwg 600-S-002, SMRC Dwg Set. -Note 4: Ref Dwg 600-GA-001, CH2MHill Dwg Set. -Note: 5: Ref Dwg 600-GA-002, CH2MHill Dwg Set. -Note: 6: Ref Dwg 600-GA-003, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

Scale 1"=30'

ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations
Area 600 Solvent Extraction Building East

Dwg.No.: PM 10100-06 | Pg. 1 of 1

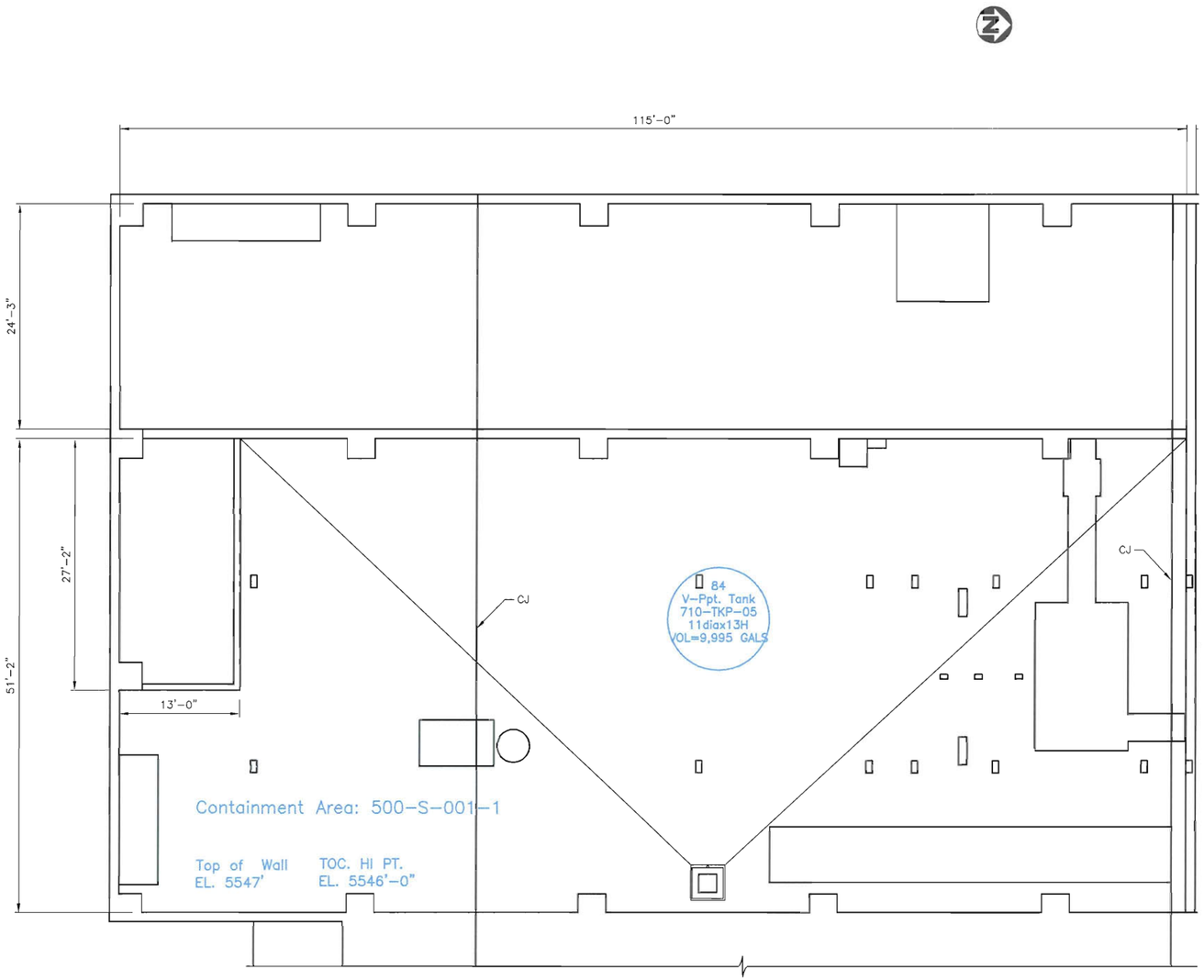
Drawing No. PM 10100-07 1/1

Containment Area 500-S-001-1
Area 700 Precipitation And Packaging Containment
Largest Tank: (84) Vanadium Precipitation Tank, 710-TKP-05
Vol = 1,336 cu.ft.
Vol at 110% = 1,470 cu.ft.

Containment: Inside, No Rainfall – 4.43" (1000 yr, 24 event)		
Area: (115'x51'-2")-(27'-2"x13')	=	5,531.0 sq.ft.
less wall fdn's (6.5sq.ft.x4)+(6.0sq.ft.x4)+ (5.0sq.ft.x1)+(59.5sq.ft.x1)	=	114.5 sq.ft.
Containment Area	=	5,416.5 sq.ft.
Wall Ht. (5547.0-5546.0)	=	1.0 ft.
Containment Volume	=	5,416.5 cu.ft.
+ Sump Volume(2x2x2)	=	8.0 cu.ft.
Total Containment Volume	=	5,424.5 cu.ft.
– No rainfall at 4.43"	=	0.0 cu.ft.
– 1 sump pump	=	8.0 cu.ft.
– 1 Tank+Base (40.0 sq.ft.x1')	=	40.0 cu.ft.
– 1 Tank+Base (9.9 sq.ft.x1')	=	9.9 cu.ft. Note 1
– 1 Tank+Base (259.8 sq.ft.x1')	=	259.8 cu.ft.
– 1 Tank+Base (235.4 sq.ft. x 1')	=	235.4 cu.ft.
– 0 pumps+bases (0.0 sq.ft. x 1')	=	0.0 cu.ft.
– 0 Stair Bases (0.0 sq..ft.x1')	=	0.0 cu.ft
– 12 Support Pedestals (0.9 sq.ft.x1')	=	10.8 cu.ft.
– 2 Support Pedestals (2.75s.q.ft. x 1')	=	5.5 cu.ft.
– 1 Utility Stations (11 sq.ft.x1')	=	11.0 cu.ft.
Avail Containment Volume	=	4,844.1 cu.ft.
Avail Containment	=	4,844.1 cu.ft.
Largest Tank (at 110%)	=	1,470.0 cu.ft.
Difference	=	3,374.1 cu.ft.
Containment Overage factor		3.30
Avail Containment Vol., % of Largest Tank Vol.		362.6%

Note 1 – The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"



I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO LICENSED
BRUCE LAWRENCE NORQUIST
28806
PROFESSIONAL ENGINEER
10-14-10

By: Bruce L. Norquist
Prof. Civil Engineer
No. 28806

NOTES	LEGEND
Notes –Note 1: Drawing May Not Be Printed T Scale. –Note 2: Ref Dwg 500–S–001, SMRC Dwg Set. –Note 3: Ref Dwg 500–S–004, SMRC Dwg Set. –Note 4: Ref Dwg 500–GA–003, CH2MHill Dwg Set. –Note: 5: Ref Dwg 500–GA–004, CH2MHill Dwg Set. –Note: 6: Ref Dwg 500–GA–005, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

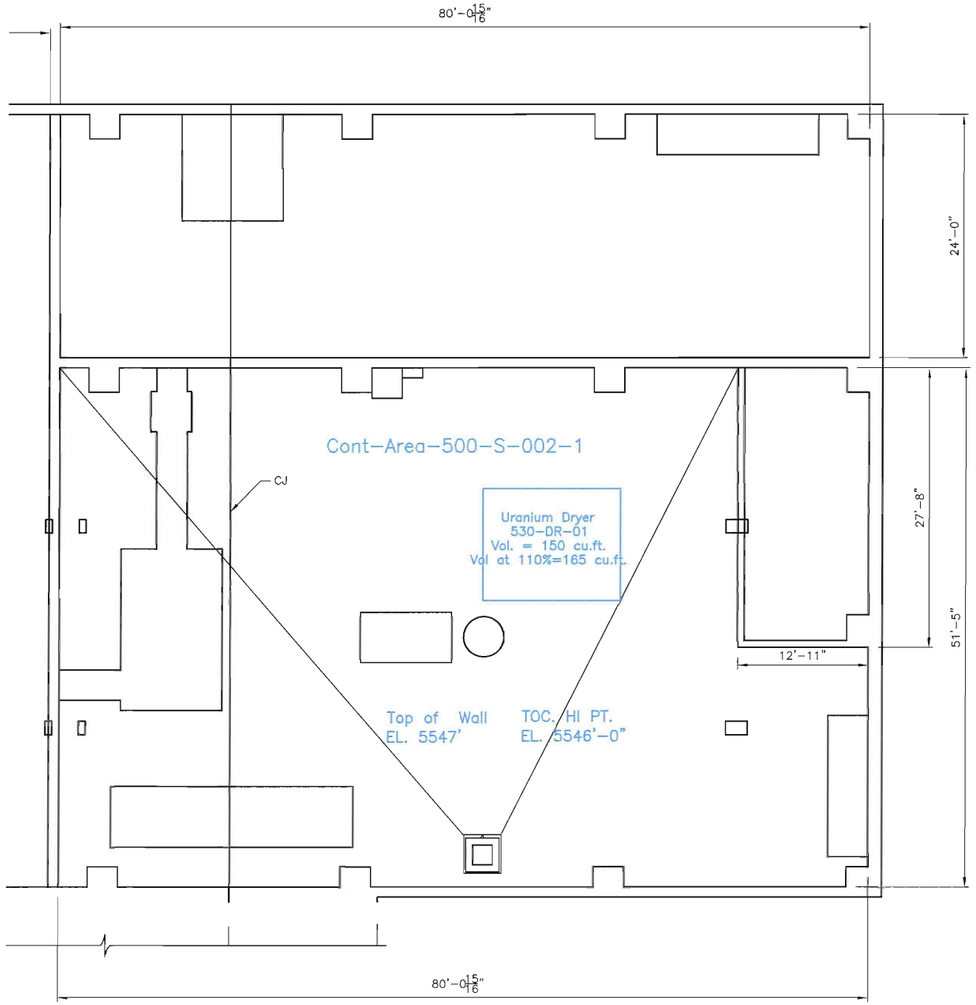
Scale 1"=15'

ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations
Area 700 Precipitation and Packaging Building

Dwg.No.: PM 10100-07 Pg. 1 of 1

Drawing No. PM 10100-08 1/1



Containment Area 500-S-002-1
Area 500 Precipitation And Packaging Containment
Largest Tank: Uranium Dryer, 530-DR-01
Vol = 150 cu.ft.
Vol at 110% = 165 cu.ft.

Containment: Inside, No Rainfall – 4.43" (1000 yr, 24 event)

Area: (80'-0 15/16" x 51'-5")-(27'-8"x12'-11")	=	3,760.0	sq.ft.
less wall fdn's (7.3sq.ft.x3)+(6.0sq.ft.x3)+(4.3sq.ft.x1)	=	44.2	sq.ft.
less step pad (56sq.ft x 1)	=	56.0	sq.ft.
Containment Area	=	3,659.8	sq.ft.
Wall Ht. (5547.0-5546.0)	=	1.0	ft.
Containment Volume	=	3,659.8	cu.ft.
+ Sump Volume(2x2x2)	=	8.0	cu.ft.
Total Containment Volume	=	3,667.8	cu.ft.
– No rainfall at 4.43"	=	0.0	cu.ft.
– 1 sump pump	=	8.0	cu.ft.
– 1 Tank+Base (236.2 sq.ft.x1')	=	236.2	cu.ft.
– 1 Tank+Base (143.9 sq.ft.x1')	=	143.9	cu.ft. Note 1
– 1 Tank+Base (45.0 sq.ft.x1')	=	45.0	cu.ft.
– 1 Tank+Base (12.6 sq.ft. x 1')	=	12.6	cu.ft.
– 0 pumps+bases (0.0 sq.ft. x 1')	=	0.0	cu.ft.
– 0 Stair Bases (0.0 sq..ft.x1')	=	0.0	cu.ft
– 2 Support Pedestals (0.9 sq.ft. x 1')	=	1.8	cu.ft.
– 2 Support Pedestals (2.9 sq.ft. x 1')	=	5.8	cu.ft.
– 1 Utility Stations (11 sq.ft.x1')	=	11.0	cu.ft.
Avail Containment Volume	=	3,203.5	cu.ft.
Avail Containment	=	3,203.5	cu.ft.
Largest Tank (at 110%)	=	165.0	cu.ft.
Difference	=	3,038.5	cu.ft.
Containment Overage factor		19.42	
Avail Containment Vol., % of Largest Tank Vol.		2,135.7%	

Note 1 – The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO REGISTERED BRUCE LAWRENCE NORQUIST 28806 PROFESSIONAL ENGINEER
10-14-10

Bruce L. Norquist
Reg. Prof. Engineer
No. 28806

NOTES	LEGEND
Notes –Note 1: Drawing May Not Be Printed To Scale. –Note 2: Ref Dwg 500-S-002, SMRC Dwg Set. –Note 3: Ref Dwg 500-S-004, SMRC Dwg Set. –Note 4: Ref Dwg 500-GA-002, CH2MHill Dwg Set. –Note: 5: Ref Dwg 500-GA-004, CH2MHill Dwg Set. –Note: 6: Ref Dwg 500-GA-005, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

Scale 1"=15'

ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations
Area 500 Precipitaiton and Packaging Building

Dwg.No.: PM 10100-08 | Pg. 1 of 1

Drawing No. PM 10100-09 1/2

MATCHLINE ON (AD) – SEE DWG 500-S-001

MATCHLINE ON (AD) – SEE DWG 500-S-002

CJ

Top of Wall
EL. 5557'-6"

TOC. HI PT.
EL. 5546'-0"

26'-0"

30'-0"

90
NH2SO4 STG Hopper
820-HPF-01
20diax20H
VOL = 60,573 GALS

Containment Area:
500-S-003-1

101
Na2ClO3 STG Tank
870-TKH-01
24diax29H
VOL = 98,145 GALS

58'-1 31/32"

Containment
Area:
500-S-003-2

Top of Wall
EL. 5554'-6"

TOC. HI PT.
EL. 5546'-0"

29'-4"

Containment Area:
500-S-003-3

Top of Wall
EL. 5547'-0"

25'-6 1/32"

93
NH2SO4 Sol'n Tank
820-TKH-03
12diax14H
VOL = 11,845 GALS

TOC. HI PT.
EL. 5546'-0"

28'-4"

Top of Wall
EL. 5547'-0"

79
V - PPT Feed Tank
710-TKH-01
8diax12H
VOL = 4,512 GALS

Containment Area:
500-S-003-6

TOC. HI PT.
EL. 5546'-0"

Containment Area:
500-S-003-4

Top of Wall
EL. 5547'-0"

35'-10 3/32"

TOC. HI PT.
EL. 5546'-0"

40'-8"

Containment Area: 500-S-003-5

95
Na2CO3 Sl'ry STG Tank
840-TKH-01
15diax20H
VOL = 26,440 GALS

21'-9"

Top of Wall
EL. 5548'"

TOC. HI PT.
EL. 5546'-0"

30'-0"

49'-8"

58'-0"

105
Return Water STG Tank
910-TKH-02
12diax12H
VOL = 10,153 GALS

35'-10 3/32"

109'-11 19/32"

Containment Area: 500-S-003-8

91'-11 3/4"

Containment Area:
500-S-003-7

Top of Wall
EL. 5547'-0"

TOC. HI PT.
EL. 5546'-0"

25'-6 1/32"

41'-0 1/32"

45
U - Thickener
510-THK-01
32diax12H
VOL=101,812 GALS

38'-0"

12'-5 31/32"

50'-11 23/32"

CJ
Top of Wall
EL. 5547'-0"

TOC. HI PT.
EL. 5546'-0"

23'-5"

63'-5"

4'-0"

16'-0"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO LICENSED
BRUCE LAWRENCE NORQUIST
28806
10-14-10
PROFESSIONAL ENGINEER

Bruce L. Norquist
Registered Professional Engineer
No. 28806

NOTES	LEGEND	DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
Notes -Note 1: Drawing May Not Be Printed To Scale. -Note 2: Ref Dwg 500-S-003, SMRC Dwg Set. -Note 3: Ref Dwg 500-S-004, SMRC Dwg Set. -Note 4: Ref Dwg 500-GA-001, CH2MHill Dwg Set. -Note 5: Ref Dwg 500-GA-005, CH2MHill Dwg Set. -Note 6: Ref Dwg 500-GA-006, CH2MHill Dwg Set.		DRAWN BY: BLN		09/14/10	

ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations
Area 500 PPT. and Thickening Area

Scale: 1"=15'

Dwg.No.: PM 10100-09

Pg. 1 of 2

Drawing No. PM 10100-09 2/2

Containment Area 500-S-003-1 NH2S04 Storage Hopper Containment
Largest Tank: (90) NH2S04 Storage Hopper, 820-HPF-01
Vol = 8,097 cu.ft.
Vol at 110% = 8,907 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)			
Area: 30' x 26'	=	780.0	sq.ft.
less wall fdn's	=	0.0	
Containment Area	=	780.0	sq.ft.
Wall Ht. (5557.5-5546.0)	=	11.5	ft.
Containment Volume	=	8,970.0	cu.ft.
+ Sump Volume(3x3x3)	=	27.0	cu.ft.
Total Containment Volume	=	8,997.0	cu.ft.
- rainfall at 4.43"	=	288.0	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 0 Tank Base (0.0 sq.ft.x1')	=	0.0	cu.ft.
- 0 Tank (0.0 sq.ft.x10.5')	=	0.0	cu.ft. Note 1
- 0 pump+base (0.0 sq.ft. x 11.5')	=	0.0	cu.ft.
- 0 Stair Bases (0.0 sq.ft. x 11.5')	=	0.0	cu.ft
- 8 Tank Pedestals (2.25 sq.ft.x11.5')	=	207.0	cu.ft.
- 0 Utility Stations (11 sq.ft. x 11.5')	=	0.0	cu.ft.
Avail Containment Volume	=	8,494.0	cu.ft.
Avail Containment	=	8,494.0	cu.ft.
Largest Tank (at 110%)	=	8,907.0	cu.ft.
Difference	=	-413.0	cu.ft.
Containment Overage factor		0.95	
Avail Containment Vol., % of Largest Tank Vol.		104.9%	

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements, "To be verified or modified at final design stage"

Containment Area 500-S-003-2 Na2ClO3 Storage Tank Containment
Largest Tank: (101) Na2ClO3 Storage Tank, 870-TKH-01
Vol = 13,119 cu.ft.
Vol at 110% = 14,431 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)			
Area: 30' x 58'-1 11/32"	=	1,744.9	sq.ft.
less wall fdn's	=	0.0	
Containment Area	=	1,744.9	sq.ft.
Wall Ht. (5554.5-5546.0)	=	8.5	ft.
Containment Volume	=	14,831.8	cu.ft.
+ Sump Volume(3x3x3)	=	27.0	cu.ft.
Total Containment Volume	=	14,858.8	cu.ft.
- rainfall at 4.43"	=	644.2	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 1 Tank Base (560.0 sq.ft.x1')	=	560.0	cu.ft.
- 1 Tank Base (212.1 sq.ft. x 1')	=	212.1	cu.ft.
- 1 Tank (153.9 sq.ft. x 7.5')	=	1,154.3	cu.ft. Note 1
- 0 pump+base (0.0 sq.ft. x 3.5')	=	0.0	cu.ft.
- 0 Stair Bases (0.0 sq.ft. x 1.0')	=	0.0	cu.ft
- 0 Tank Pedestals (0.0 sq.ft.x 8.5')	=	0.0	cu.ft.
- 0 Utility Stations (11 sq.ft. x 10.5')	=	0.0	cu.ft.
Avail Containment Volume	=	12,280.2	cu.ft.
Avail Containment	=	12,280.2	cu.ft.
Largest Tank (at 110%)	=	14,431.0	cu.ft.
Difference	=	-2,150.8	cu.ft.
Containment Overage factor		0.85	
Avail Containment Vol., % of Largest Tank Vol.		93.6%	

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements, "To be verified or modified at final design stage"

Containment Area 500-S-003-3 NH2S04 Solution Storage Tank Containment
Largest Tank: (93) NH2S04 Solution Storage Tank, 820-TKH-03
Vol = 1,583 cu.ft.
Vol at 110% = 1,742 cu.ft.

Containment: Inside, No Rainfall - 4.43" (1000 yr, 24 event)			
Area: 29'-4" x 25'-6 1/32"	=	748.1	sq.ft.
less wall fdn's (6.5 sq/ft x1)	=	6.5	
Containment Area	=	741.6	sq.ft.
Wall Ht. (5547.0-5546.0)	=	1.0	ft.
Containment Volume	=	741.6	cu.ft.
+ Sump Volume(3x3x3)	=	27.0	cu.ft.
Total Containment Volume	=	768.6	cu.ft.
- No rainfall at 4.43"	=	0.0	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 1 Tank Base (140.0 sq.ft.x1')	=	140.0	cu.ft.
- 0 Tank (0.0 sq.ft. x 0')	=	0.0	cu.ft. Note 1
- 1 pump+base (5.2 sq.ft. x 1.0')	=	5.2	cu.ft.
- 0 Stair Bases (0.0 sq.ft. x 1.0')	=	0.0	cu.ft
- 3 Support Pedestals (3.6 sq.ft.x 1')	=	10.8	cu.ft.
- 0 Utility Stations (11 sq.ft. x 10.5')	=	0.0	cu.ft.
Avail Containment Volume	=	604.6	cu.ft.
Avail Containment	=	604.6	cu.ft.
Largest Tank (at 110%)	=	1,742.0	cu.ft.
Difference	=	-1,137.4	cu.ft.
Containment Overage factor		0.35	
Avail Containment Vol., % of Largest Tank Vol.		38.2%	

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements, "To be verified or modified at final design stage"

Containment Area 500-S-003-4 Na2CO3 Sump Pump Area Containment
Largest Tank: None
Vol = N/A cu.ft.
Vol at 110% = N/A cu.ft.

Containment: Inside, No Rainfall - 4.43" (1000 yr, 24 event)			
Area: 40'-8" x 35'-10 31/32"	=	1,460.5	sq.ft.
less wall fdn's (6.5 sq/ft x1)+(7.3sq.ftx1)+ (5.2 sq.ft. x 1)	=	19.0	sq.ft.
Containment Area	=	1,441.5	sq.ft.
Wall Ht. (5547.0-5546.0)	=	1.0	ft.
Containment Volume	=	1,441.5	cu.ft.
+ Sump Volume(4x4x4)	=	64.0	cu.ft.
Total Containment Volume	=	1,505.5	cu.ft.
- No rainfall at 4.43"	=	0.0	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 0 Tank Base (140.0 sq.ft.x1')	=	0.0	cu.ft.
- 0 Tank (0.0 sq.ft. x 0')	=	0.0	cu.ft. Note 1
- 5 pump+base (13.8 sq.ft. x 1.0')	=	69.0	cu.ft.
- 1 pump+base (7.8 sq.ft. x 1.0')	=	7.8	cu.ft
- 0 Support Pedestals (0.0 sq.ft.x 1')	=	0.0	cu.ft.
- 0 Utility Stations (11 sq.ft. x 10.5')	=	0.0	cu.ft.
Avail Containment Volume	=	1,420.7	cu.ft.

Note 1 - The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

Containment Area 500-S-003-5 Na2CO3 Slurry Storage Tank Containment
Largest Tank: (95) Na2CO3 Slurry Storage Tank, 840-TKH-01
Vol = 3,534 cu.ft.
Vol at 110% = 3,888 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)			
Area: 21'-9" x 49'-8"	=	1,080.3	sq.ft.
less wall fdn's	=	0.0	
Containment Area	=	1,080.3	sq.ft.
Wall Ht. (5548.0-5546.0)	=	2.0	ft.
Containment Volume	=	2,160.5	cu.ft.
+ Sump Volume(3x3x3)	=	27.0	cu.ft.
Total Containment Volume	=	2,187.5	cu.ft.
- rainfall at 4.43"	=	398.8	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 1 Tank Base (239.4 sq.ft.x1')	=	239.4	cu.ft.
- 1 Tank Base (162.4 sq.ft. x 1')	=	162.4	cu.ft.
- 1 Tank (113.1 sq.ft.x1')	=	113.1	cu.ft. Note 1
- 0 pump+base (0.0 sq.ft. x 0.0')	=	0.0	cu.ft.
- 0 Stair Bases (0.0 sq.ft. x 2')	=	0.0	cu.ft
- 1 Cable Supports (10.0 sq.ft.x2')	=	20.0	cu.ft.
- 0 Utility Stations (11 sq.ft. x 2')	=	0.0	cu.ft.
Avail Containment Volume	=	1,245.8	cu.ft.
Avail Containment	=	1,245.8	cu.ft.
Largest Tank (at 110%)	=	3,888.0	cu.ft.
Difference	=	-2,642.2	cu.ft.
Containment Overage factor		0.32	
Avail Containment Vol., % of Largest Tank Vol.		35.3%	

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements, "To be verified or modified at final design stage"

Containment Area 500-S-003-6 Vanadium Precipitation Feed Tank Containment
Largest Tank: (79) Vanadium Precipitate Feed Tank, 710-TKH-01
Vol = 603 cu.ft.
Vol at 110% = 664 cu.ft.

Containment: Inside, No Rainfall - 4.43" (1000 yr, 24 event)			
Area: 28'-4" x 25'-6 1/32"	=	722.6	sq.ft.
less wall fdn's (0.0 sq/ft x1)	=	0.0	
Containment Area	=	722.6	sq.ft.
Wall Ht. (5547.0-5546.0)	=	1.0	ft.
Containment Volume	=	722.6	cu.ft.
+ Sump Volume(4x4x4)	=	64.0	cu.ft.
Total Containment Volume	=	786.6	cu.ft.
- No rainfall at 4.43"	=	0.0	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 1 Tank Base (175.1 sq.ft.x1')	=	175.1	cu.ft.
- 1 Tank (50.3 sq.ft. x 0')	=	0.0	cu.ft. Note 1
- 2 pump+base (2.0 sq.ft. x 1.0')	=	4.0	cu.ft.
- 0 Stair Bases (0.0 sq.ft. x 1.0')	=	0.0	cu.ft
- 0 Support Pedestals (0.0 sq.ft.x 1')	=	0.0	cu.ft.
- 0 Utility Stations (11 sq.ft. x 10.5')	=	0.0	cu.ft.
Avail Containment Volume	=	599.5	cu.ft.
Avail Containment	=	599.5	cu.ft.
Largest Tank (at 110%)	=	664.0	cu.ft.
Difference	=	-64.5	cu.ft.
Containment Overage factor		0.90	
Avail Containment Vol., % of Largest Tank Vol.		99.4%	

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements, "To be verified or modified at final design stage"

Containment Area 500-S-003-7 Uranium Thickener Containment
Largest Tank: (45) Uranium Thickener, 510-THK-01
Vol. =101812 gals.
Vol = 13,609 cu.ft.
Vol at 110% = 14,970 cu.ft.

Containment: Inside, No Rainfall - 4.43" (1000 yr, 24 event)			
Area: (38' x 91'-11 3/4")-(41'-0 1/32" x 12'-5 31/32")	=	2,982.8	sq.ft.
less wall fdn's (7.4 sq.ft. x 2)	=	14.8	sq.ft.
Containment Area	=	2,968.0	sq.ft.
Wall Ht. (5547-5546.0)	=	1.0	ft.
Containment Volume	=	2,968.0	cu.ft.
+ Sump Volume(4x4x4)	=	64.0	cu.ft.
Total Containment Volume	=	3,032.0	cu.ft.
- No rainfall at 4.43"	=	0.0	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 1 Tank Base (265.1 sq.ft.x1')	=	265.1	cu.ft.
- 1 Tank Base (67.1 sq.ft.x1')	=	67.1	cu.ft.
- 1 Tank Base (7.1 sq.ft x 1')	=	7.1	cu.ft.
- 1 Tank Base (10.6 sq.ft. x 1')	=	10.6	cu.ft.
- 1 Tank (50.3 sq.ft.x0')	=	0.0	cu.ft. Note 1
- 3 Tank (50.3 sq.ft.x0')	=	0.0	cu.ft. Note 1
- 3 pumps+bases (2.0 sq.ft. x 1')	=	6.0	cu.ft.
- 1 pump+base (4.6 sq.ft. x 1')	=	4.6	cu.ft.
- 3 pump+base (7.8 sq.ft. x 1')	=	23.4	cu.ft.
- 1 Stair Base (67.5 sq.ft.x1')	=	67.5	cu.ft
- 4 Platform Pedestals (2.1 sq.ft.x 1')	=	8.4	cu.ft.
- 8 Tank Pedestals (4.0sq.ft. x 1')	=	32.0	cu.ft.
Avail Containment Volume	=	2,532.2	cu.ft.
Avail Containment	=	2,532.2	cu.ft.
Largest Tank (at 110%)	=	14,970.0	cu.ft.
Difference	=	-12,437.8	cu.ft.
Containment Overage factor		0.17	
Avail Containment Vol., % of Largest Tank Vol.		18.6%	

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements, "To be verified or modified at final design stage"

Containment Area 500-S-003-8 Process Water Containment
Largest Tank: (105) Return Water Storage Tank, 910-TKH-02
Vol = 1,357 cu.ft.
Vol at 110% = 1,493 cu.ft.

Containment: Inside, No Rainfall - 4.43" (1000 yr, 24 event)			
Area: (23'-5" x 109'-11 19/32")+(58'-0" x 12'-5 31/32")	=	3,299.9	sq.ft.
less wall fdn's (7.3sq.ft.x3)+(7.4sq.ft.x1)+ (6.0sq.ft.x1) +(56sq.ft.x1)	=	91.3	sq.ft.
Containment Area	=	3,208.6	sq.ft.
Wall Ht. (5547-5546.0)	=	1.0	ft.
Containment Volume	=	3,208.6	cu.ft.
+ Sump Volume(3x3x3)	=	27.0	cu.ft.
Total Containment Volume	=	3,235.6	cu.ft.
- No rainfall at 4.43"	=	0.0	cu.ft.
- 1 sump pump	=	8.0	cu.ft.
- 1 Tank Base (581.8 sq.ft.x1')	=	581.8	cu.ft.
- 1 Tank Base (82.8 sq.ft.x1')	=	82.8	cu.ft.
- 2 Tanks+Bases (38.5 sq.ft x 1')	=	77.0	cu.ft.
- 2 Tanks (113.1 sq.ft.x0')	=	0.0	cu.ft. Note 1
- 1 Tank (63.6 sq.ft.x0')	=	0.0	cu.ft. Note 1
- 2 pumps+bases (7.8 sq.ft. x 1')	=	15.6	cu.ft.
- 1 pump+base (19.6 sq.ft. x 1')	=	19.6	cu.ft.
Avail Containment Volume	=	2,450.8	cu.ft.
Avail Containment	=	2,450.8	cu.ft.
Largest Tank (at 110%)	=	1,493.0	cu.ft.
Difference	=	957.8	cu.ft.
Containment Overage factor		1.64	
Avail Containment Vol., % of Largest Tank Vol.		180.6%	

Note 1 - The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO LICENSED
BRUCE LAWRENCE NORQUIST
28806
10-14-10
PROFESSIONAL ENGINEER
Bruce L. Norquist
Prof. Engineer
State of Colorado
No. 28806

NOTES	LEGEND
Notes -Note 1: Drawing May Not Be Printed To Scale. -Note 2: Ref Dwg 500-S-003, SMRC Dwg Set. -Note 3: Ref Dwg 500-S-004, SMRC Dwg Set. -Note 4: Ref Dwg 500-GA-001, CH2MHill Dwg Set. -Note 5: Ref Dwg 500-GA-005, CH2MHill Dwg Set -Note 6: Ref Dwg 500-GA-006, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

Scale: N/A

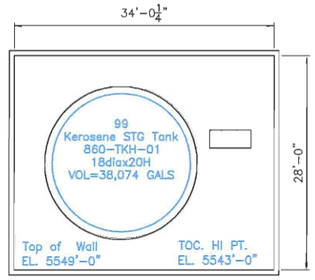
ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations
Area 500 PPT. and Thickening Area

Dwg.No.: PM 10100-09 | Pg. 2 of 2

Drawing No. PM 10100-10 1/1

Containment Area: 800-GA-002-2



Kerosene Storage

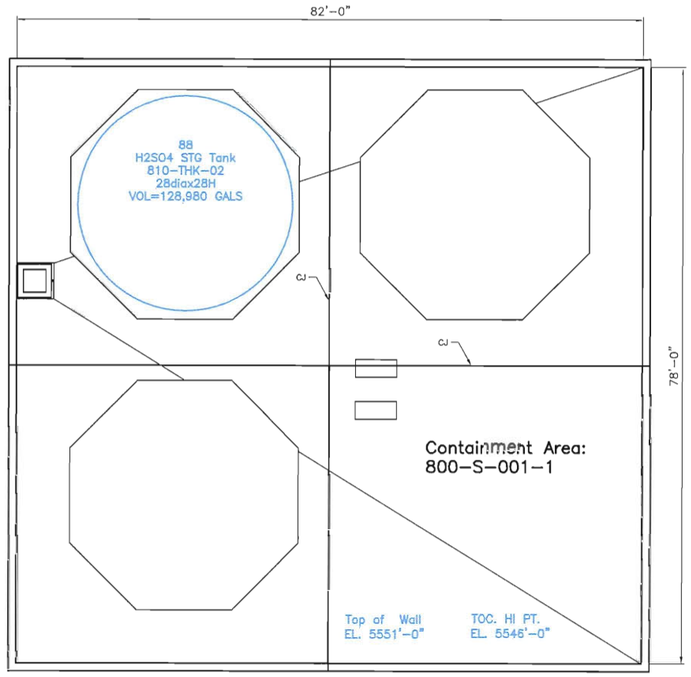
Containment Area 800-GA-002-2 Kerosene Storage Containment Area
Largest Tank: (99) Kerosene Storage Tank, 860-TKH-01
Vol = 5,089 cu.ft.
Vol at 110% = 5,598 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)

Area: 28' x 34'-0¼"	=	952.6 sq.ft.
less wall fdn's	=	0.0
Containment Area	=	952.6 sq.ft.
Wall Ht. (5549.0-5543.0)	=	6.0 ft.
Containment Volume	=	5,715.5 cu.ft.
+ Sump Volume (Assume 3x3x3)	=	27.0 cu.ft.
Total Containment Volume	=	5,742.5 cu.ft.
- rainfall at 4.43"	=	351.7 cu.ft.
- 0 sump pump	=	8.0 cu.ft.
- 1 Tank Base (314.2 sq.ft.x1')	=	314.2 cu.ft.
- 0 Tanks (0.0 sq.ft. x 0.0')	=	0.0 cu.ft. Note 1
- 1 pump+base (12.6 sq.ft. x 3.0')	=	37.8 cu.ft.
- 0 Utility Stations (11 sq.ft.x 0.0')	=	0.0 cu.ft.
Avail Containment Volume	=	5,030.8 cu.ft.
Avail Containment	=	5,030.8 cu.ft.
Largest Tank (at 110%)	=	5,598.0 cu.ft.
Difference	=	-567.2 cu.ft.
Containment Overage factor		0.90
Avail Containment Vol., % of Largest Tank Vol.		98.9%

Note 1 - The largest tank volume is not a deduction

Note: Raise wall to meet secondary containment requirements,
"To be verified or modified at final design stage"



Sulfuric Acid Storage Area

Containment Area 800-S-001-1 Sulfuric Acid Storage Containment
Largest Tank: (88) H2SO4 Storage Tank, 810-TKH-02
Vol = 17,241 cu.ft.
Vol at 110% = 18,965 cu.ft.

Containment: Outside, Rainfall - 4.43" (1000 yr, 24 event)

Area: 82' x 78'	=	6,396.0 sq.ft.
less wall fdn's	=	0.0
Containment Area	=	6,396.0 sq.ft.
Wall Ht. (5551.0-5546.0)	=	5.0 ft.
Containment Volume	=	31,980.0 cu.ft.
+ Sump Volume(3x3x3)	=	27.0 cu.ft.
Total Containment Volume	=	32,007.0 cu.ft.
- rainfall at 4.43"	=	2,361.2 cu.ft.
- 1 sump pump	=	8.0 cu.ft.
- 3 Tank Base (745.6 sq.ft.x1')	=	2,236.8 cu.ft.
- 2 Tanks (615.8 sq.ft.x4.0')	=	4,926.4 cu.ft. Note 1
- 2 pumps+bases (12.6 sq.ft. x 3.0')	=	75.6 cu.ft.
- 0 Utility Stations (11 sq.ft.x 4.5')	=	0.0 cu.ft.
Avail Containment Volume	=	22,399.0 cu.ft.
Avail Containment	=	22,399.0 cu.ft.
Largest Tank (at 110%)	=	18,965.0 cu.ft.
Difference	=	3,434.0 cu.ft.
Containment Overage factor		1.18
Avail Containment Vol., % of Largest Tank Vol.		129.9%

Note 1 - The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO LICENSED
BRUCE LAWRENCE NORQUIST
28806
10-14-10
PROFESSIONAL ENGINEER

Bruce L. Norquist
Regn. Prof. Engineer
No. 28806

NOTES	LEGEND
Notes: -Note 1: Drawing May Not Be Printed To Scale. -Note 2: Ref .Dwg .800-S-001, SMRC Dwg Set. -Note 3: Ref .Dwg .800-GA-002, CH2MHill Dwg Set.	

DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
DRAWN BY: BLN		09/14/10	

ENERGY FUELS RESOURCES CORP.

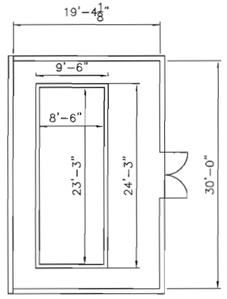
Title: Volume Calculations
Area 800 Sulfuric Acid Storage
and Kerosene Storage

Scale: 1"=20'

Dwg.No.: PM 10100-10

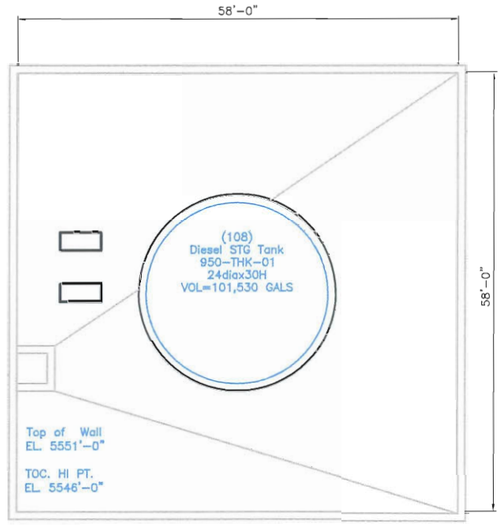
Pg. 1 of 1

Drawing No. PM 10100-11 1/1



Standby
Generator
100-GEN-01
W/Day Tank
Tank Ref. No.= (109)
Equip. List. Ref. 950-TKH-02

Containment Area 100-GA-001-2
Largest Tank = (109) Standby Generator Diesel Day Tank (950-TKH-02)
Vol= 3,600 gals
Note: This Tank will be double Walled (Double Containment)
- Ref. "Proposal for Pinon Ridge Mill", pg. 2, Stewart & Stevenson, 2/25/08



Containment Area: 100-GA-001-1 Diesel Storage Tank Area
Diesel Storage Tank
Containment Area

Containment Area: 100-GA-001-1 Diesel Storage Tank Containment
Largest Tank: (108) Diesel Storage Tank, 950-TKH-01
Vol = 13,572 cu.ft.
Vol at 110% = 14,929 cu.ft.

Containment: Outside, Rainfall	=	4.43" (1000 yr, 24 event)
Area: 58' x 58'	=	3364.0 sq.ft.
less wall fdn's	=	0.0
Containment Area	=	3364.0 sq.ft.
Wall Ht. (5551.0-5546.0)	=	5.0 ft.
Containment Volume	=	16,820.0 cu.ft.
+ Sump Volume(4x4x4)	=	64.0 cu.ft.
Total Containment Volume	=	16,884.0 cu.ft.
- rainfall at 4.43"	=	1,241.9 cu.ft.
- 1 sump pump	=	8.0 cu.ft.
- 1 Tank Base (530.9 sq.ft. x 1')	=	530.9 cu.ft.
- 0 Tank (452.4 sq.ft. x 0')	=	0.0 cu.ft. Note 1
- 2 pumps+Bases (12.6sq.ft.x3')	=	75.6 cu.ft.
- 0 pedestals (0sq.ft. x 1')	=	0.0 cu.ft.
Avail Containment Volume	=	15,027.6 cu.ft.
Avail Containment Capacity	=	15,027.6 cu.ft.
Largest Tank (at 110%)	=	14,929.0 cu.ft.
Difference	=	98.6 cu.ft.
Containment Overage factor		1.01
Avail Containment Vol., % of Largest Tank Vol.		110.7%

Note 1 - The largest tank volume is not a deduction

General Note: "All to be verified or modified at final design stage"

I, Bruce L. Norquist, certify that this drawing was prepared by me.
Drawings and reference materials provided by Energy Fuels Resources Corp. for the Pinon Ridge Mill Radioactive Material License Application formed the basis of this work. The scope of this work was limited to the evaluation of the volumetric adequacy of the secondary containment structures.

COLORADO REGISTERED BRUCE LAWRENCE NORQUIST 28806 PROFESSIONAL ENGINEER
10-14-10
Bruce L. Norquist
Reg. P.E./N.A. Engineer
No. 28806

NOTES	LEGEND	DEPARTMENT	APPROVED BY	DATE	DEPARTMENT COMMENTS / REVISION DESCRIPTION
Notes --Note 1: Drawing May Not Be Printed to Scale. --Note 2: Ref Dwg 100-GA-001, CH2MHill Dwg Set.					
		DRAWN BY: BLN		09/14/10	

Scale 1"=20'

ENERGY FUELS RESOURCES CORP.

Title: Volume Calculations
Area 900 Diesel Storage
and Standby Generator Set

Dwg.No.: PM 10100-11 Pg. 1 of 1