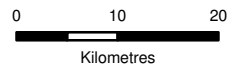


Legend

- West Ells SAGD Project Area
- Sunshine Oilsands Ltd. Lands
- Provincial Park
- First Nations



West Ells SAGD Project

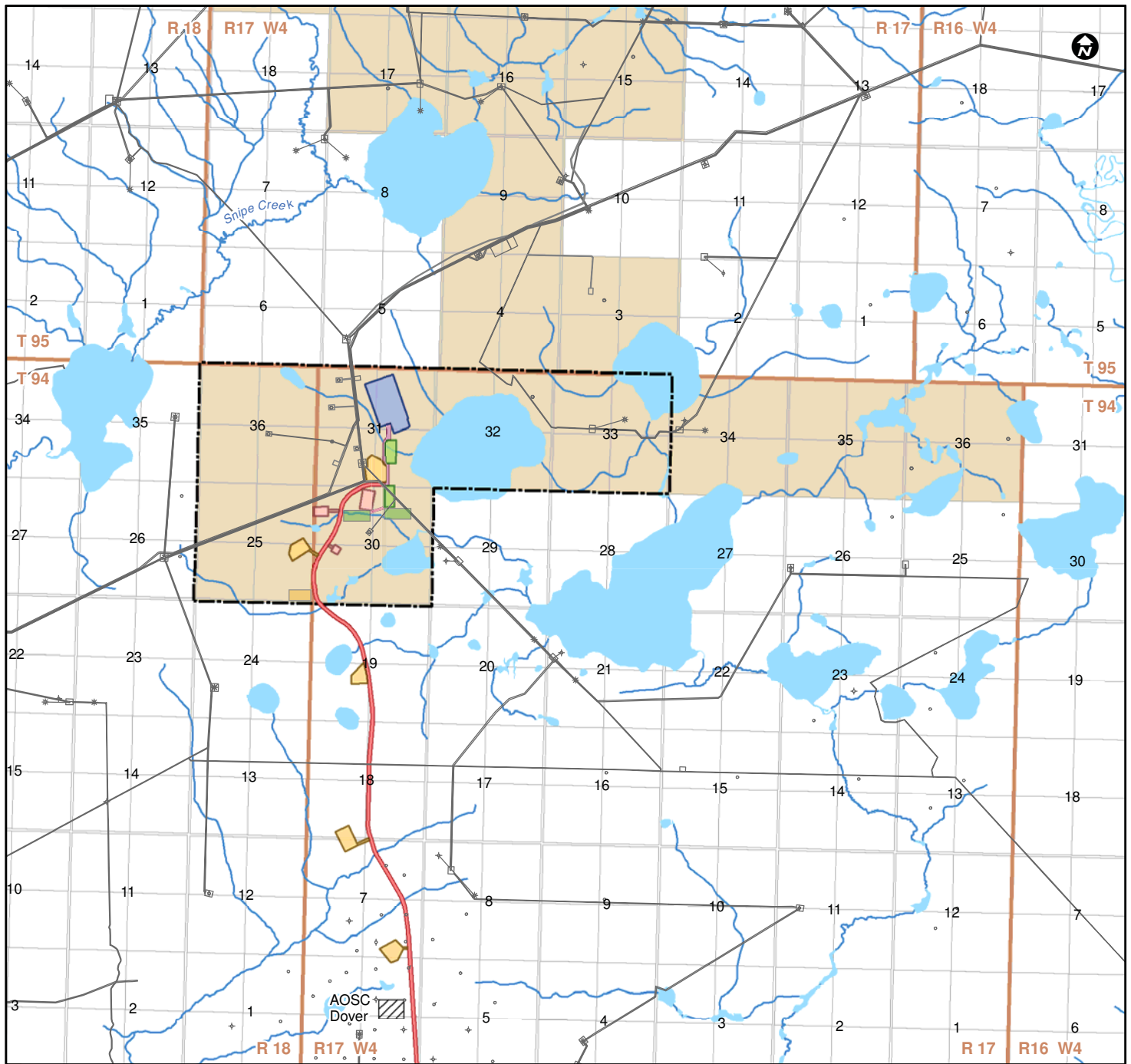
TITLE:

Project Location

DRAWN: PS
 CHECKED: KY
 DATE: Nov 26/08
 PROJECT: 08-015

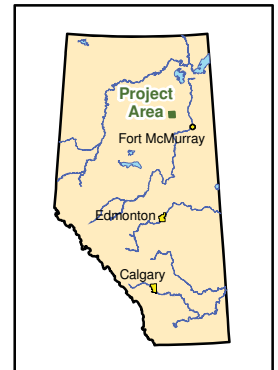
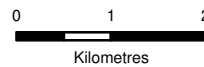
FIGURE:

1.1-1



Legend

- Project Area
- Plant Site
- Well Pad
- Camp
- Borrow Pit
- Utility Corridor
- Main Access Road
- Sunshine Oilsands Lease



West Eils SAGD Project

TITLE:

Phase 1 and Phase 2 Development

DRAWN: PS

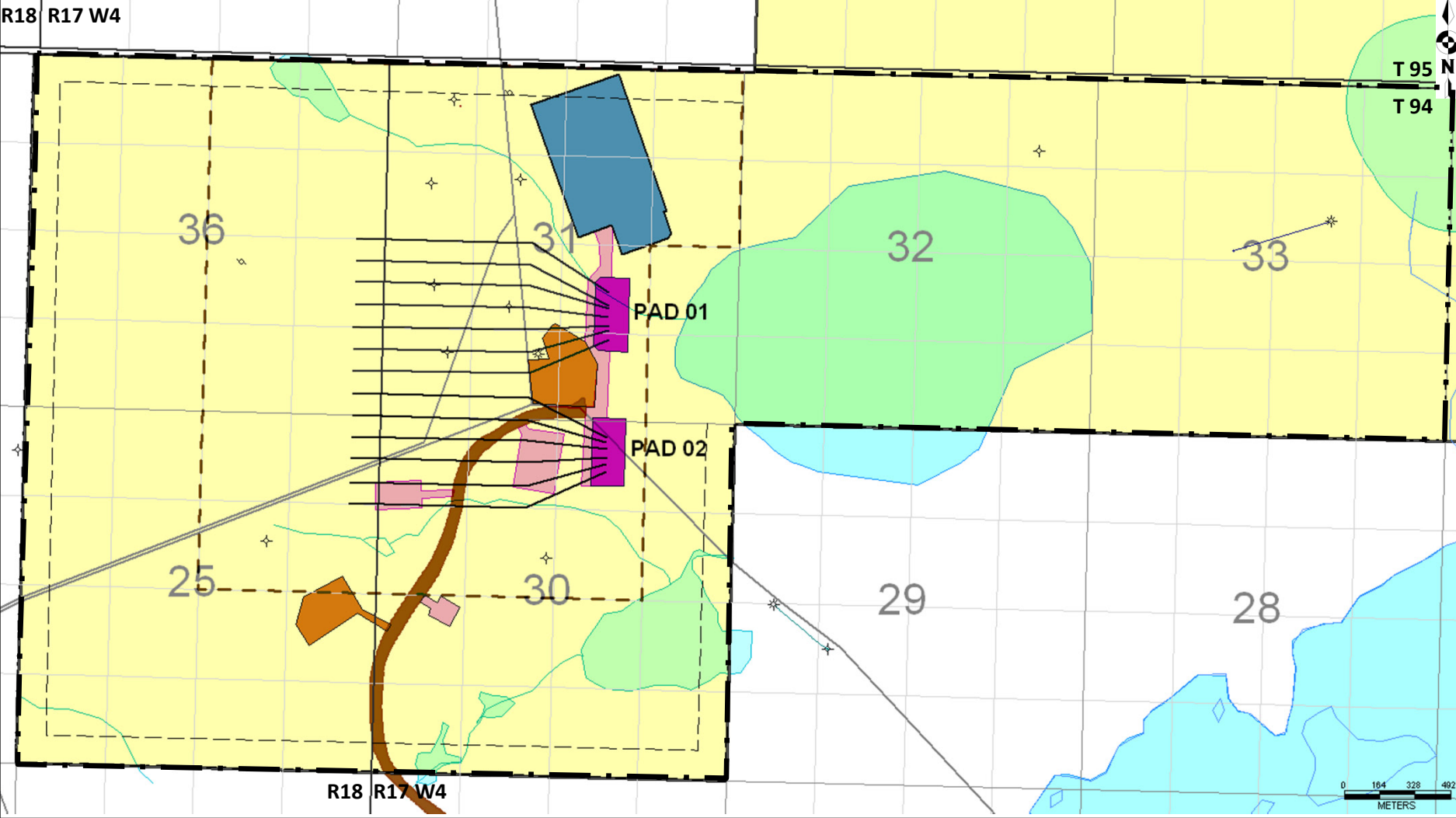
CHECKED: KY

DATE: Nov 27/08

PROJECT: 08-015

FIGURE:

1.1-2



Legend

- Project Area
- Project Development Area
- Sunshine Oilsands Lease
- Trajectories
- Plant Site
- Phase 1 Well Pad
- Camp & Utility Corridor
- Borrow Pit
- Main Access Road



West Ells SAGD Project

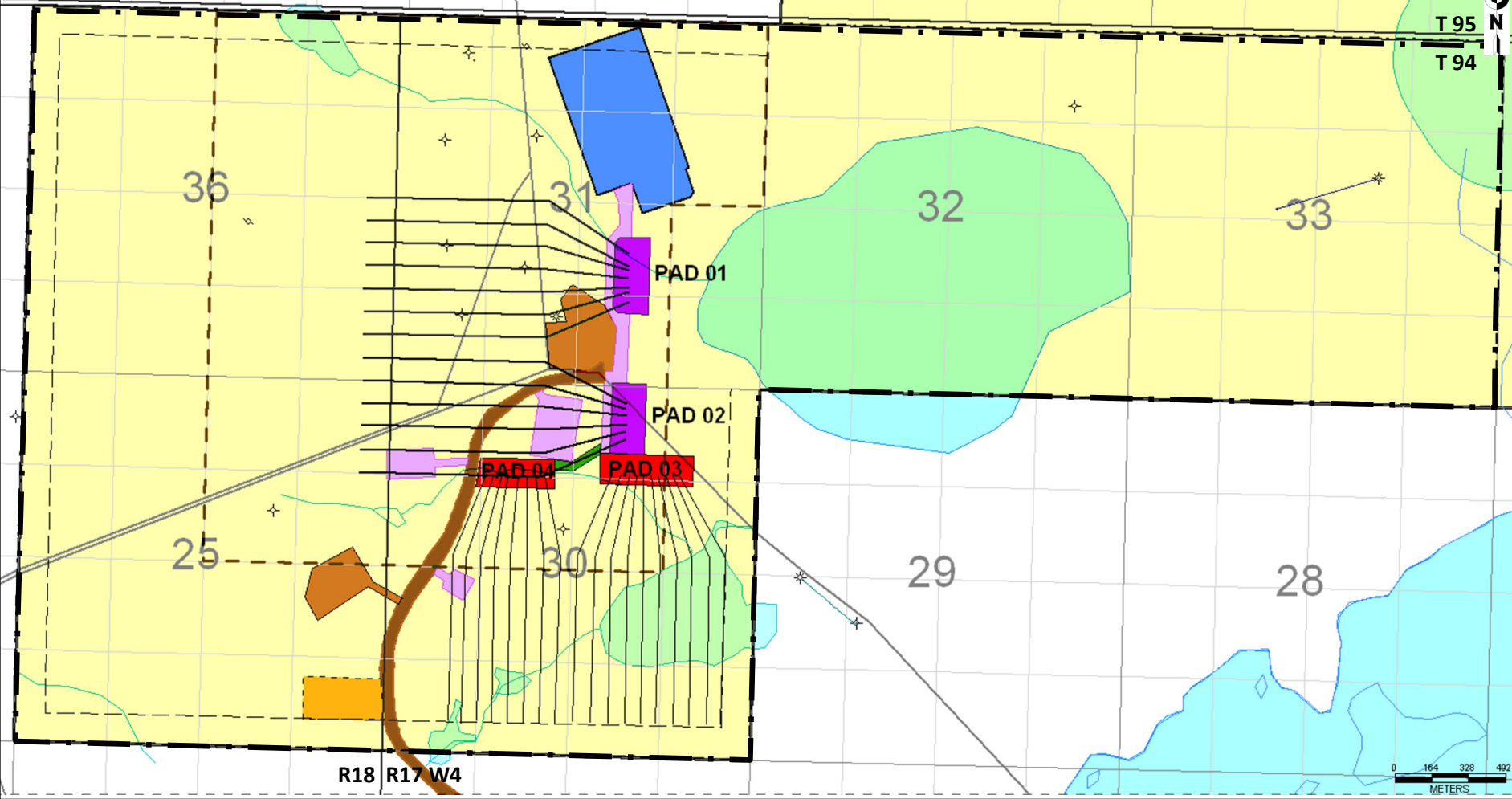
TITLE: **Project Facilities
Phase 1**

Drawn By:
Sunshine
Date:
Feb 2010

**Figure:
1.1- 3**

R18 R17 W4

T 95 N
T 94



R18 R17 W4



Legend

- Project Area
- Project Development Area
- Sunshine Oilsands Lease
- Trajectories
- Phase 2 Trajectories
- Plant Site
- Phase 1 Well Pad
- Camp & Utility Corridor
- Borrow Pit
- Main Access Road
- Phase 2 Well Pads
- Phase 2 Utility Corridor
- Phase 2 Borrow Pit

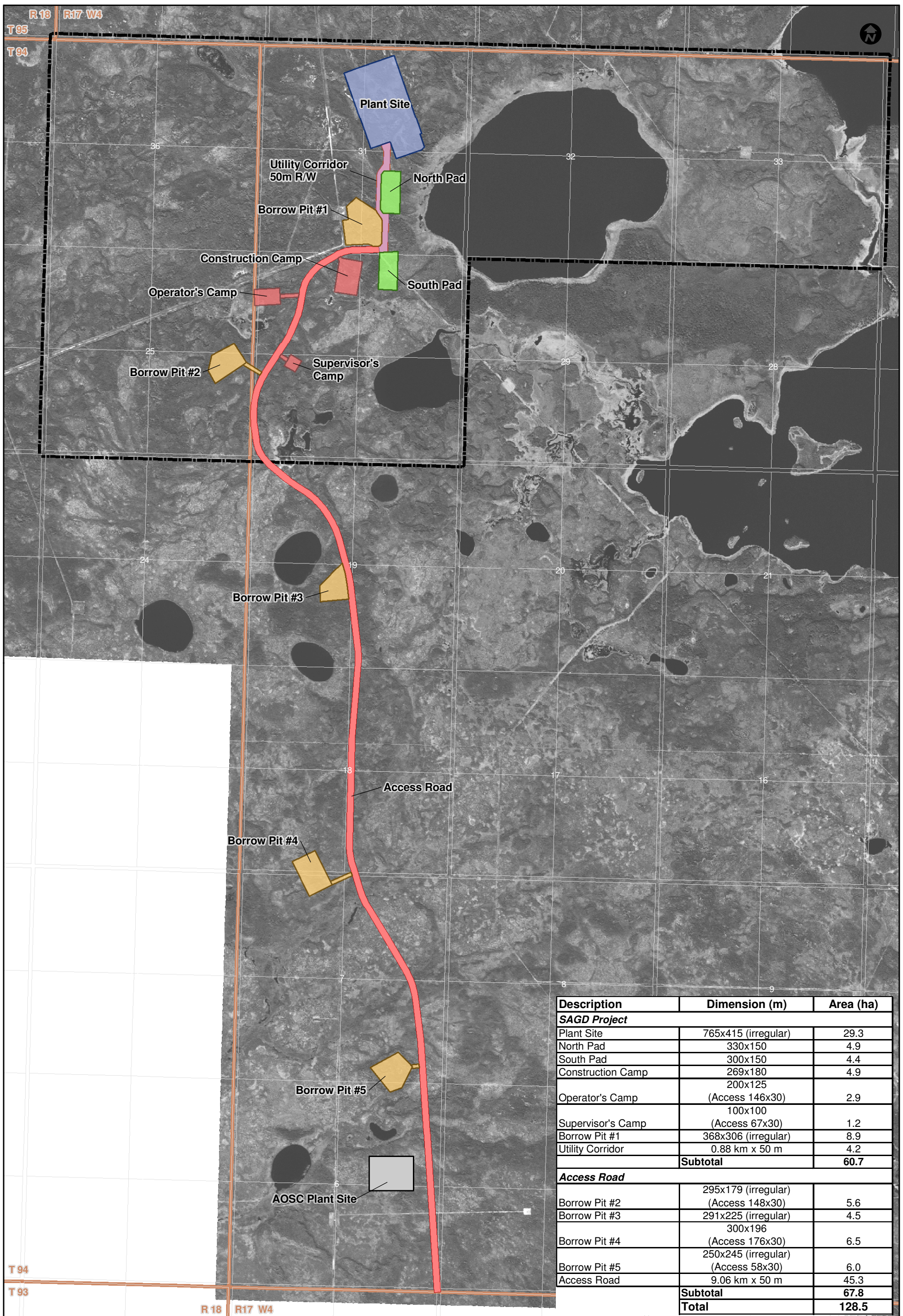


West Ells SAGD Project

TITLE: **Project Facilities
Phase 2**

Drawn By:
Sunshine
Date:
Feb 2010

**Figure:
1.1- 4**



Description	Dimension (m)	Area (ha)
SAGD Project		
Plant Site	765x415 (irregular)	29.3
North Pad	330x150	4.9
South Pad	300x150	4.4
Construction Camp	269x180	4.9
Operator's Camp	200x125 (Access 146x30)	2.9
Supervisor's Camp	100x100 (Access 67x30)	1.2
Borrow Pit #1	368x306 (irregular)	8.9
Utility Corridor	0.88 km x 50 m	4.2
Subtotal		60.7
Access Road		
Borrow Pit #2	295x179 (irregular) (Access 148x30)	5.6
Borrow Pit #3	291x225 (irregular)	4.5
Borrow Pit #4	300x196 (Access 176x30)	6.5
Borrow Pit #5	250x245 (irregular) (Access 58x30)	6.0
Access Road	9.06 km x 50 m	45.3
Subtotal		67.8
Total		128.5

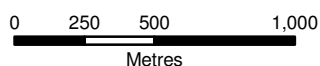


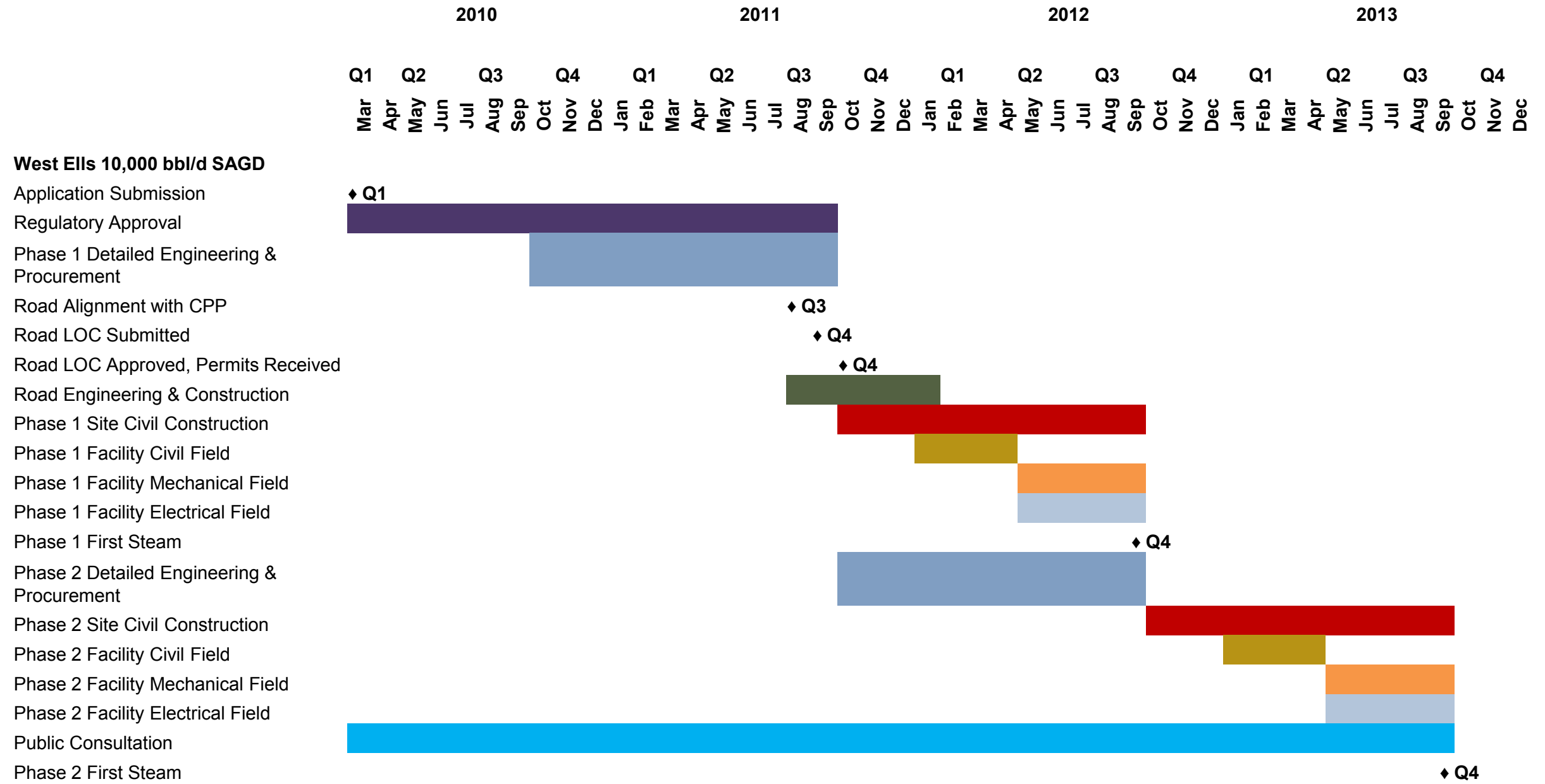
West Ells SAGD Project

TITLE: Phase 1 Development Footprint

DRAWN: SL/PS
 CHECKED: KY
 DATE: Nov 26/08
 PROJECT: 08-015

FIGURE:
1.3-1





West Ells SAGD Project

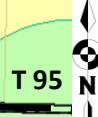
TITLE:

Project Timeline

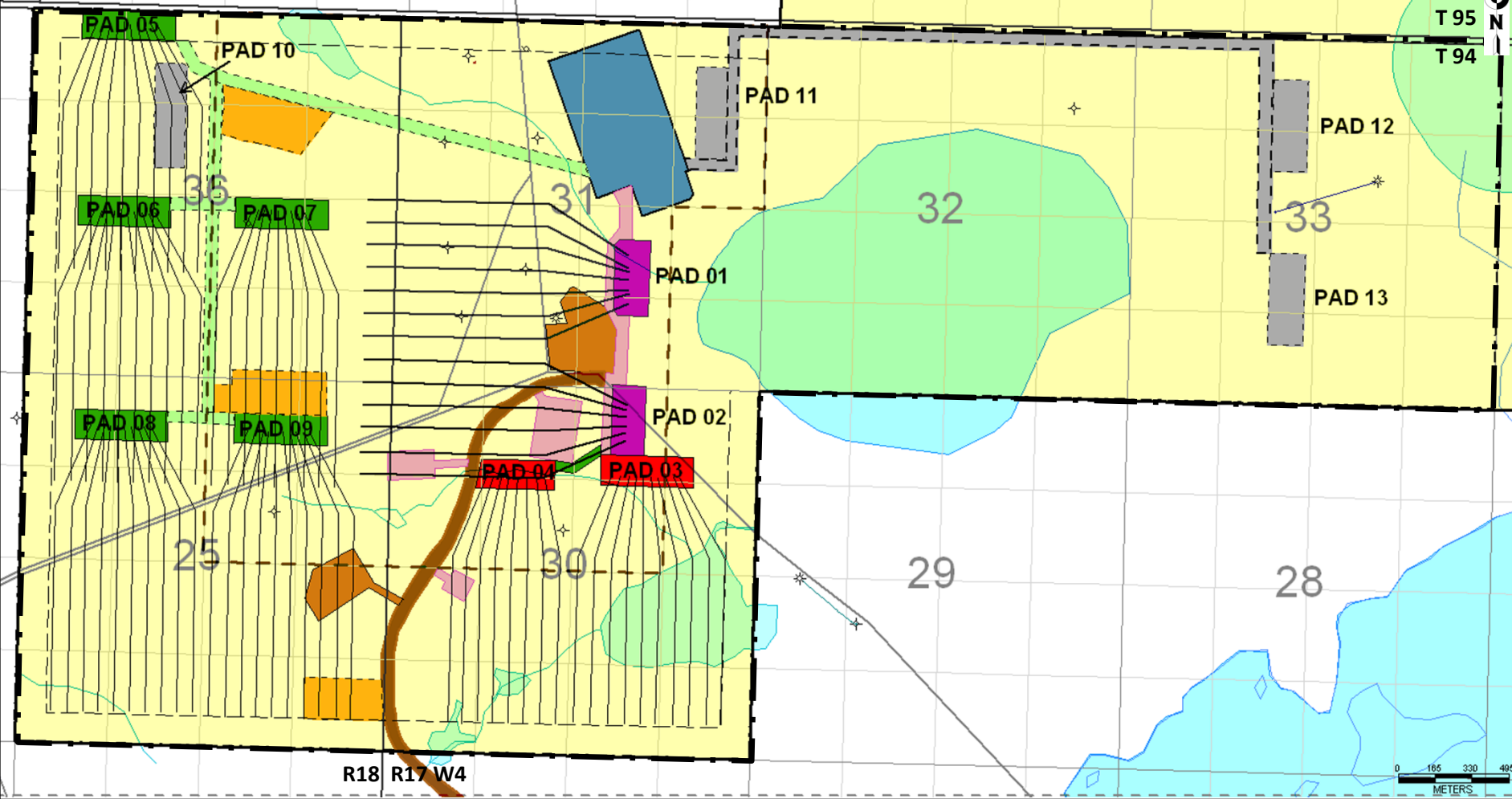
Figure:

1.7-1

R18 R17 W4



T 95
T 94



R18 R17 W4



Legend

- Project Area
- Project Development Area
- Sunshine Oilsands Lease
- Trajectories
- Future Trajectories
- Plant Site
- Phase 1 Well Pad
- Camp & Utility Corridor
- Borrow Pit
- Main Access Road
- Phase 2 Well Pads
- Future Well Pads
- Future Utility Corridor
- Future Borrow Pit
- Future Optional Utility Corridor and Well Pads

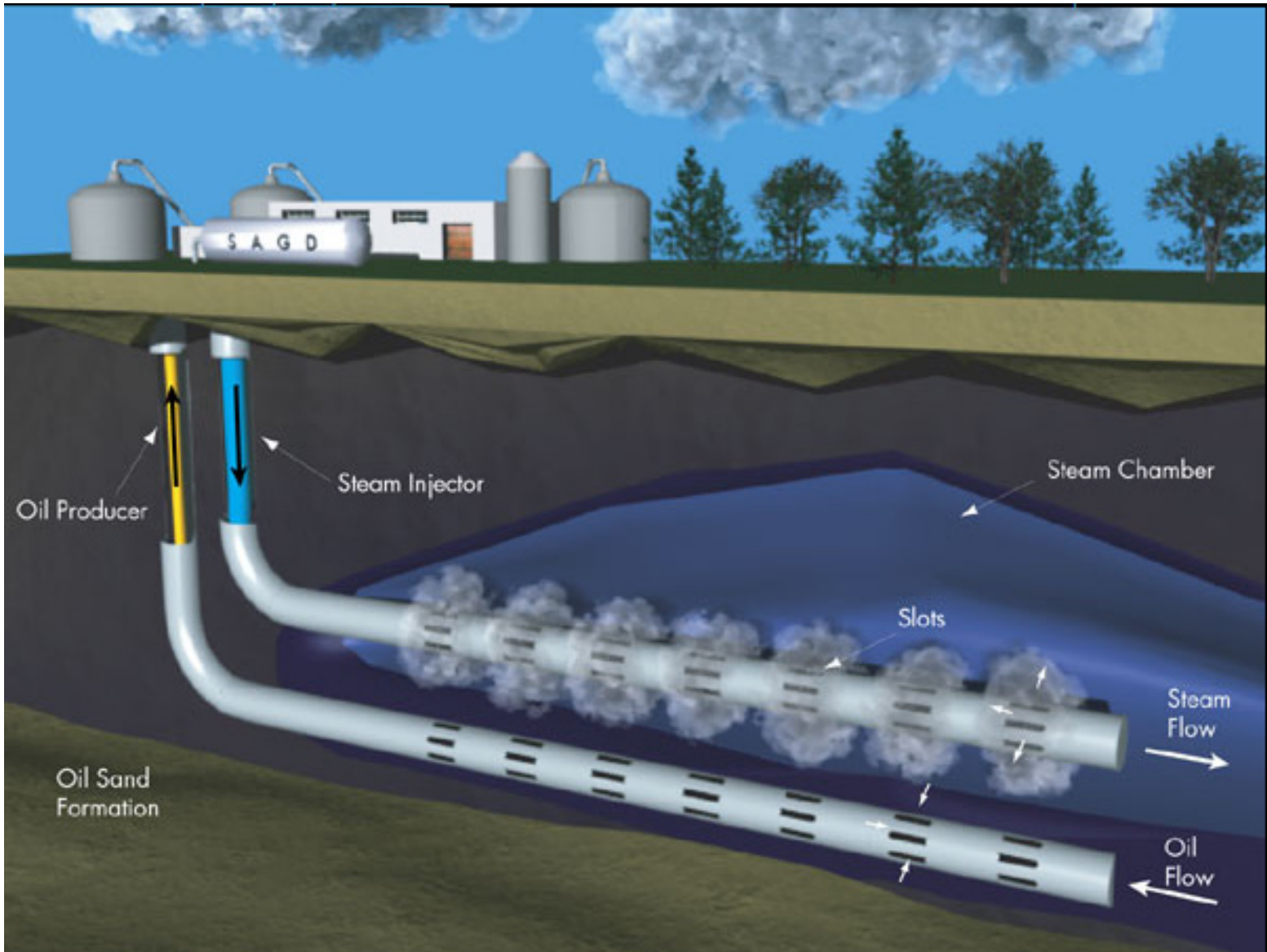


West Ells SAGD Project

TITLE: **Project Facilities**

Drawn By:
Sunshine
Date:
Feb 2010

Figure:
2.1-1



West Ells SAGD Project

TITLE:

Dual Well Pair Schematic

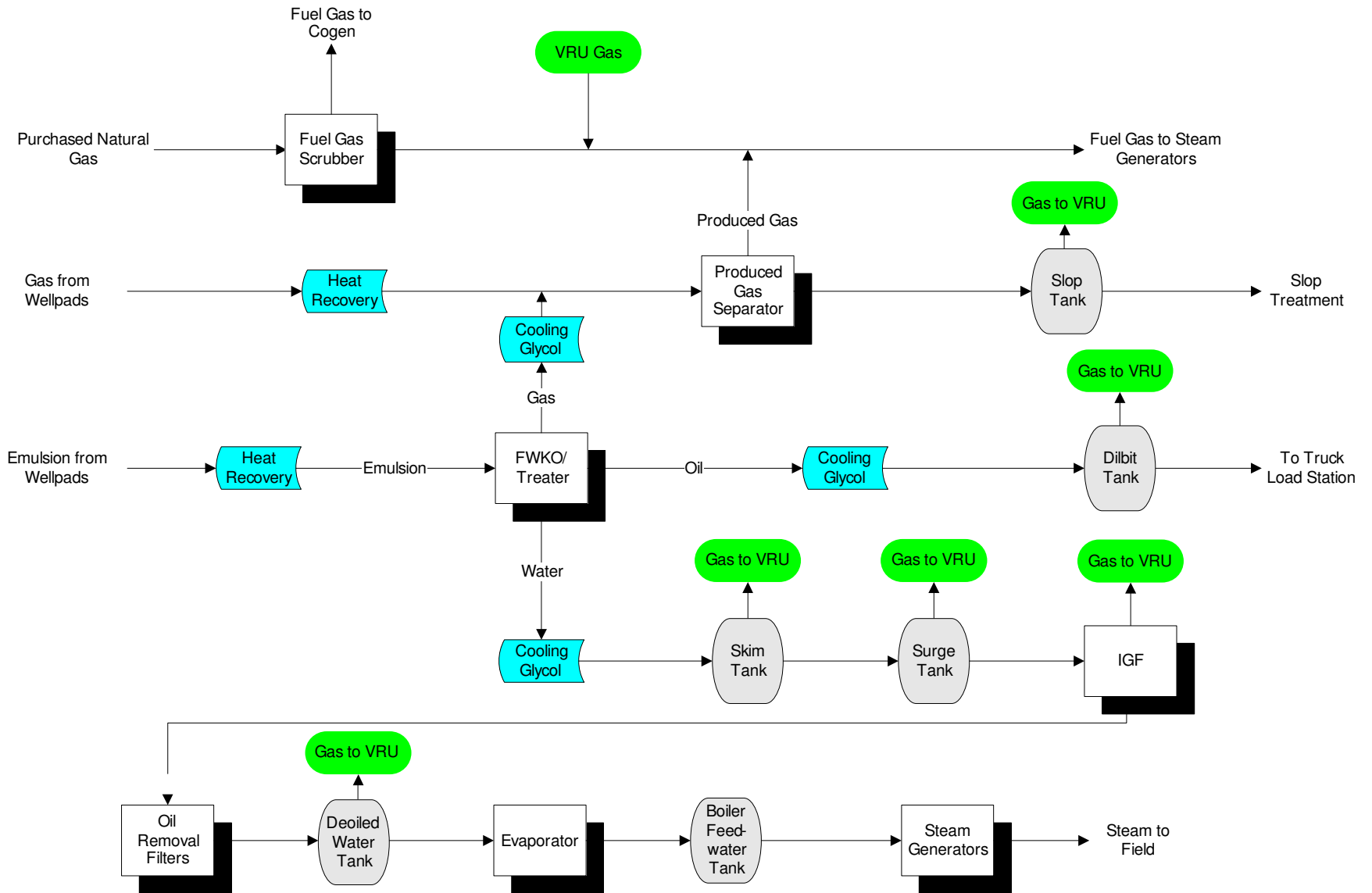
Drawn By:

TW

Date:

Nov 2009

**Figure:
2.1-2**



West Eils SAGD Project

TITLE:

Process Flow Diagram

DRAWN: PS

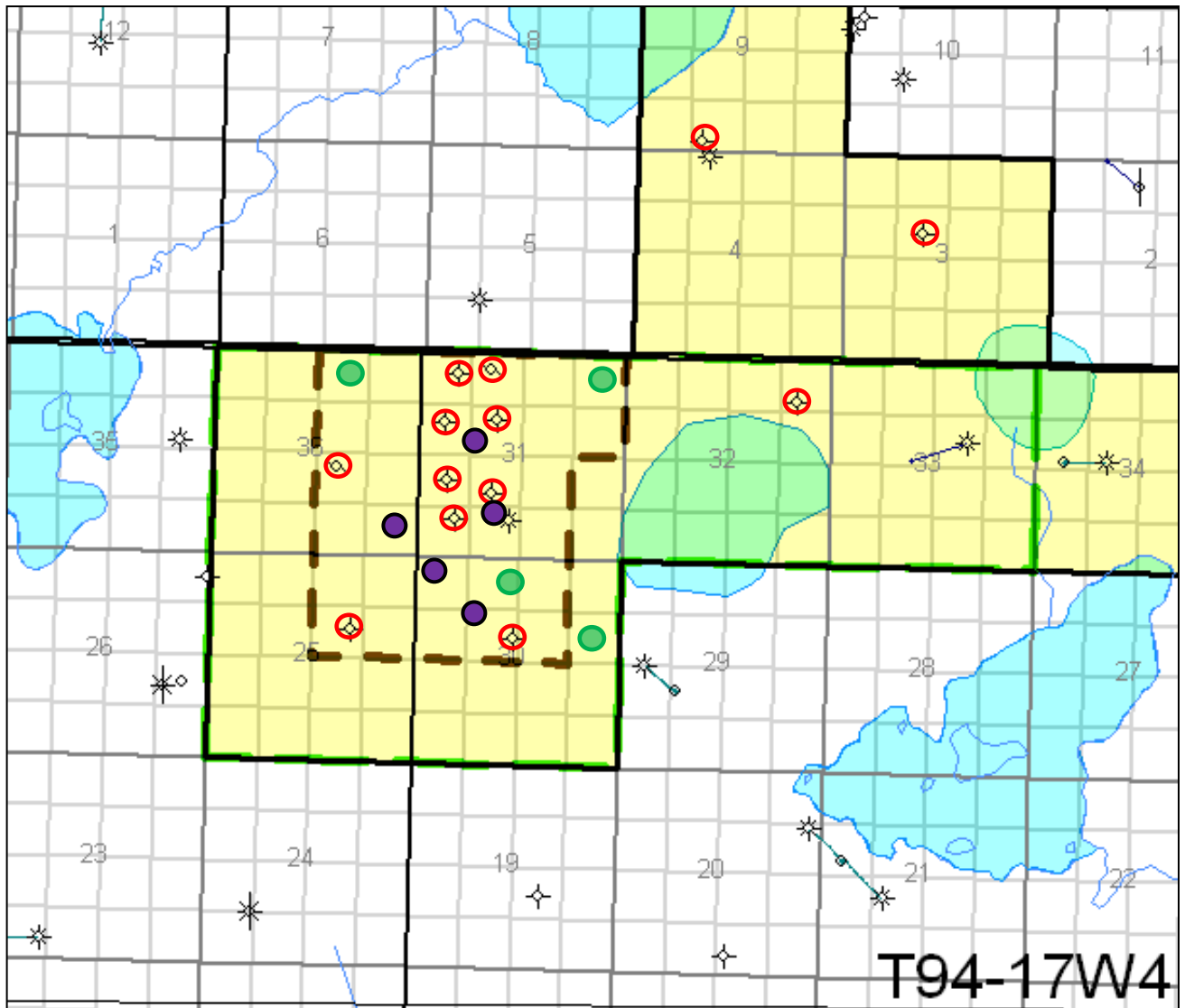
CHECKED: KY

DATE: Nov 3/08

PROJECT: 08-015

FIGURE:

2.1-3



Legend

-  Project Development Area
-  Project Area
-  Drilled Winter 07/08
-  Future Core Holes
-  Observation Wells

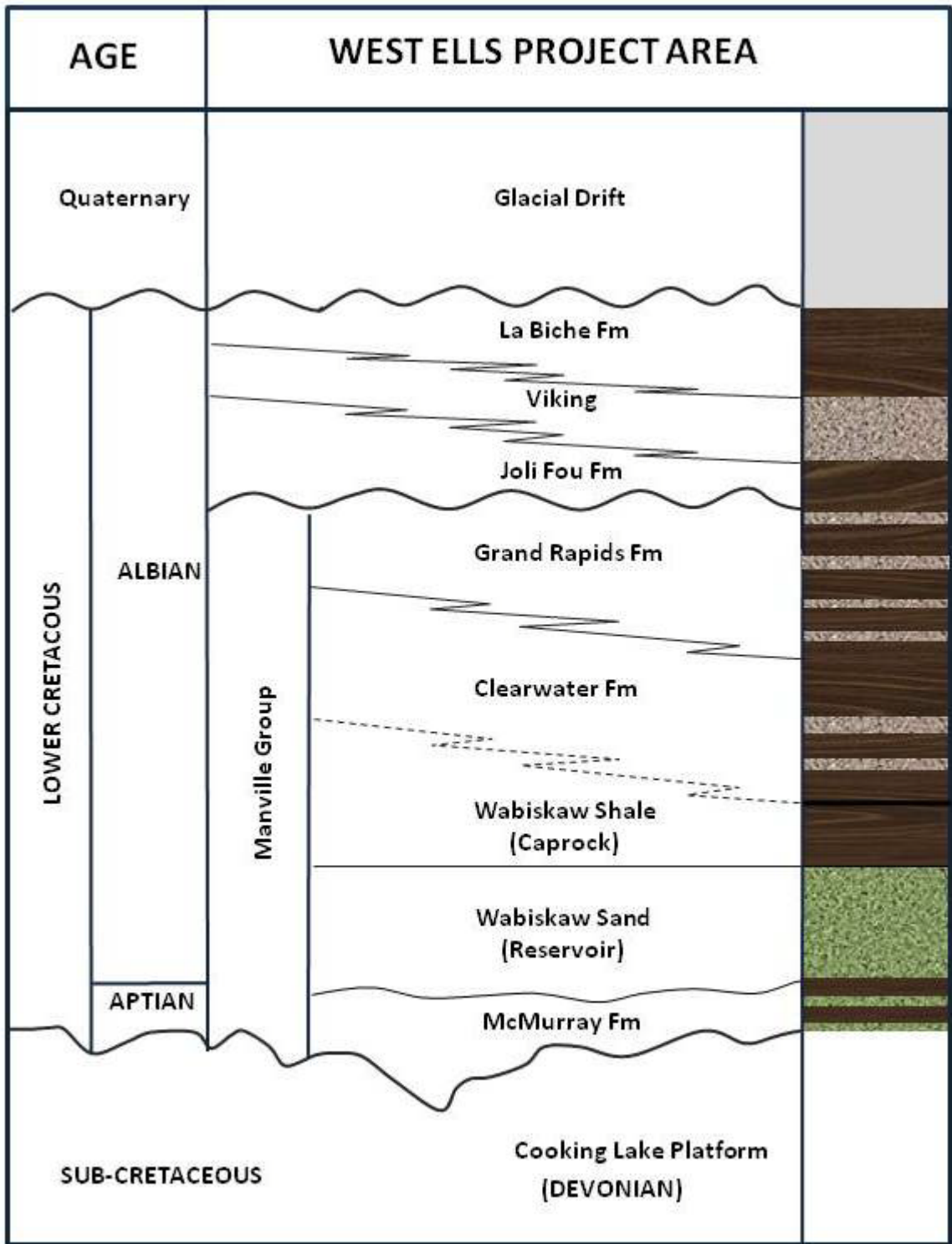


West Ells SAGD Project

TITLE:

Exploration Plan

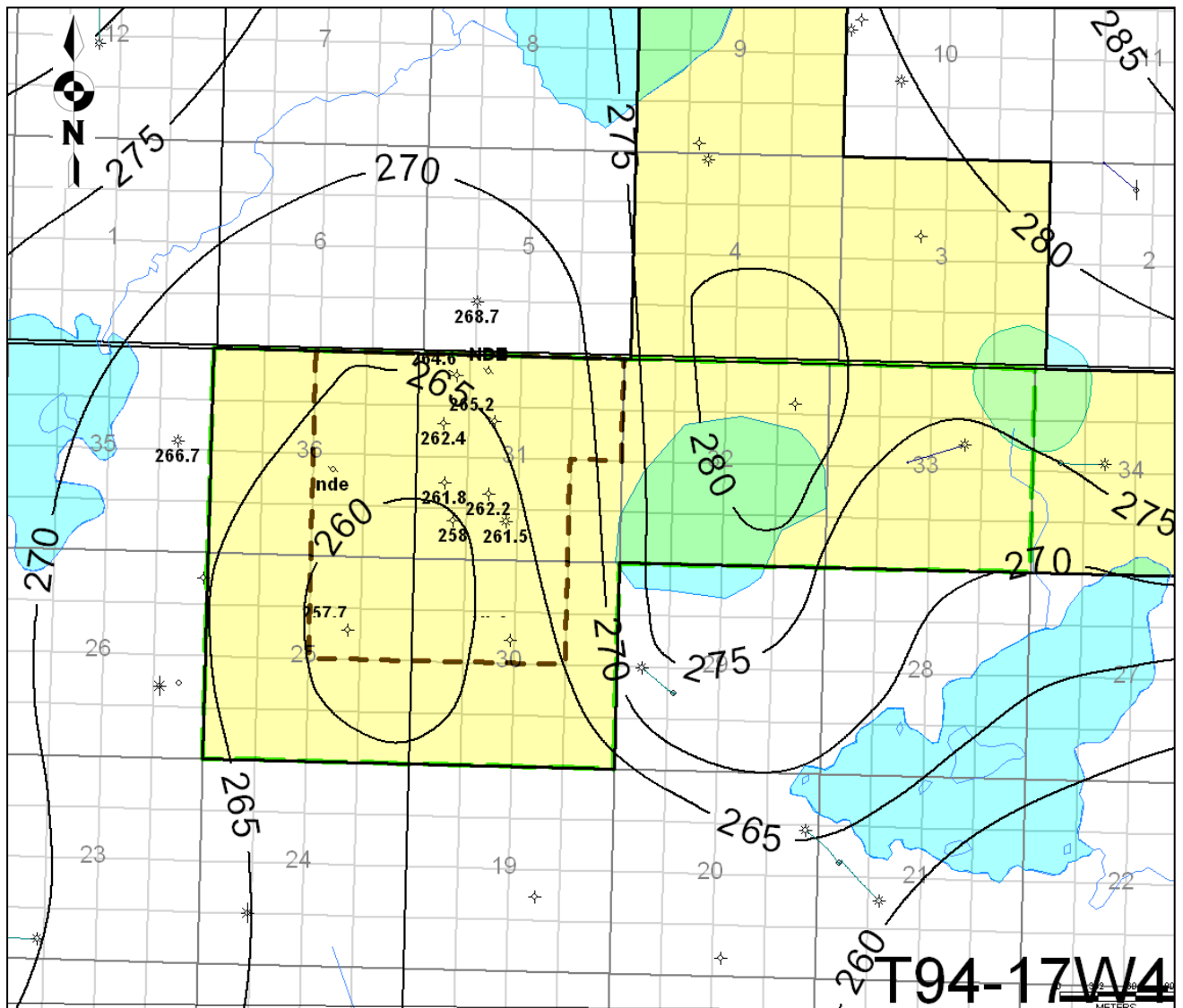
**Figure:
2.2-1**





West Ells SAGD Project

TITLE: Stratigraphic Column

Figure: 2.2-2



Legend

-  Project Development Area
-  Project Area



West Ells SAGD Project

TITLE:

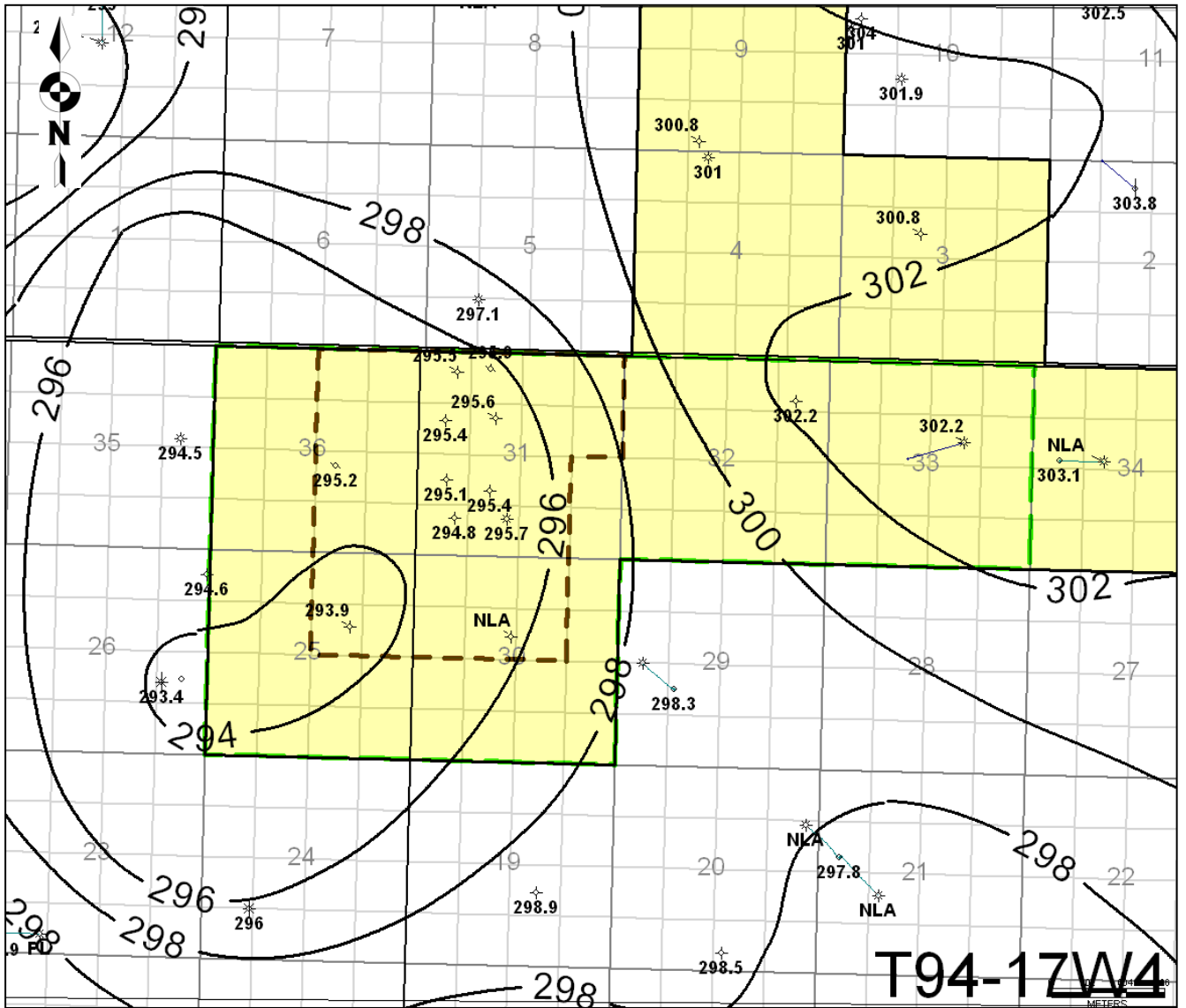
Devonian Structure Map

CI: 5m (Contours are in Meters Above Sea Level)



By: PC

Figure:

2.2-3



Legend

-  Project Development Area
-  Project Area



West Ells SAGD Project

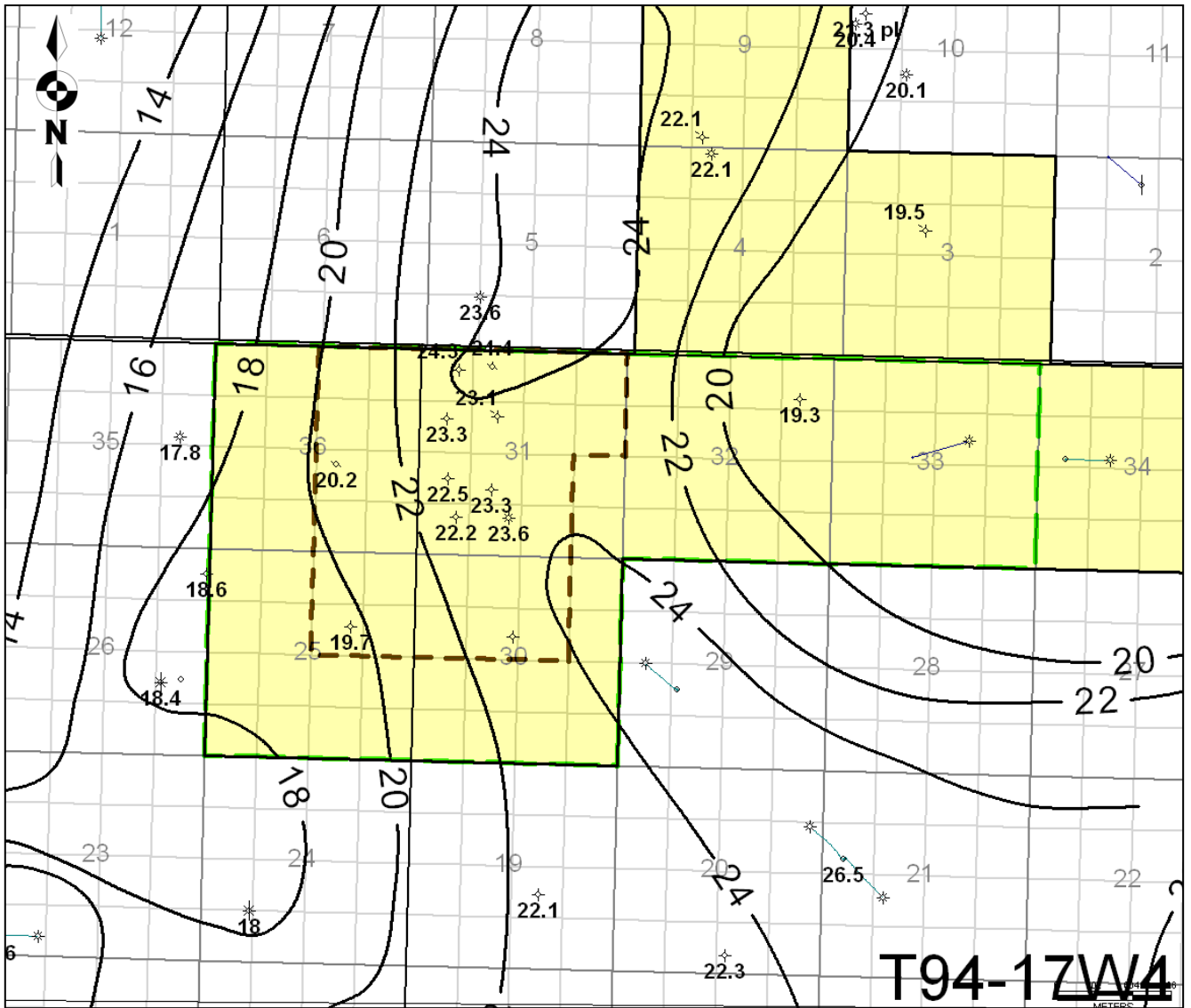
TITLE:

Structure on the Wabiskaw A Sand



CI: 2m (Contours are in Meters Above Sea Level) By: PC

Figure:

2.2-4



Legend

-  Project Development Area
-  Project Area



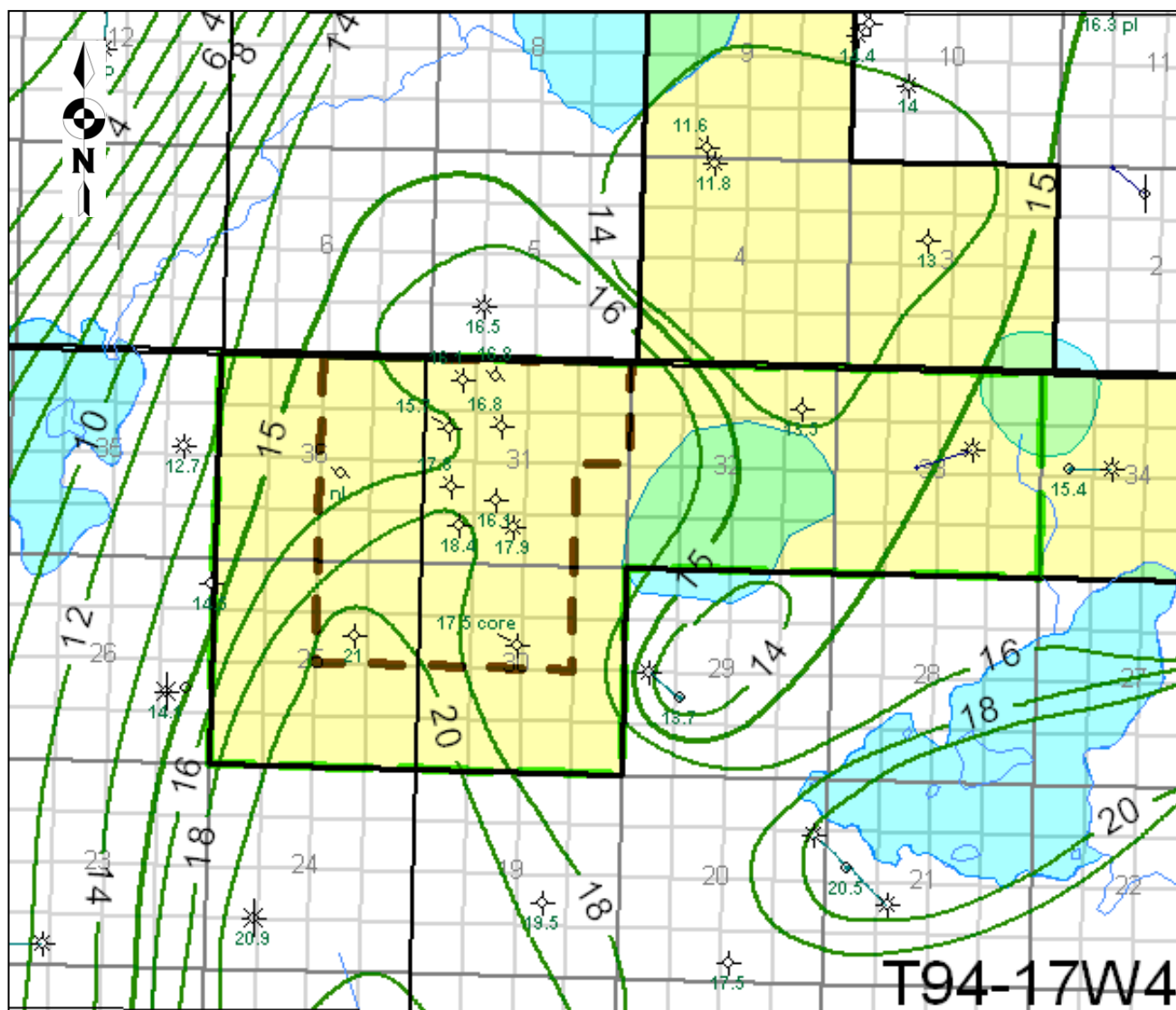
West Ells SAGD Project

TITLE:



Wabiskaw Gross Sand Member Isopach
CI: 2m

By: PC

Figure:
2.2-5



Legend

-  Project Development Area
-  Project Area



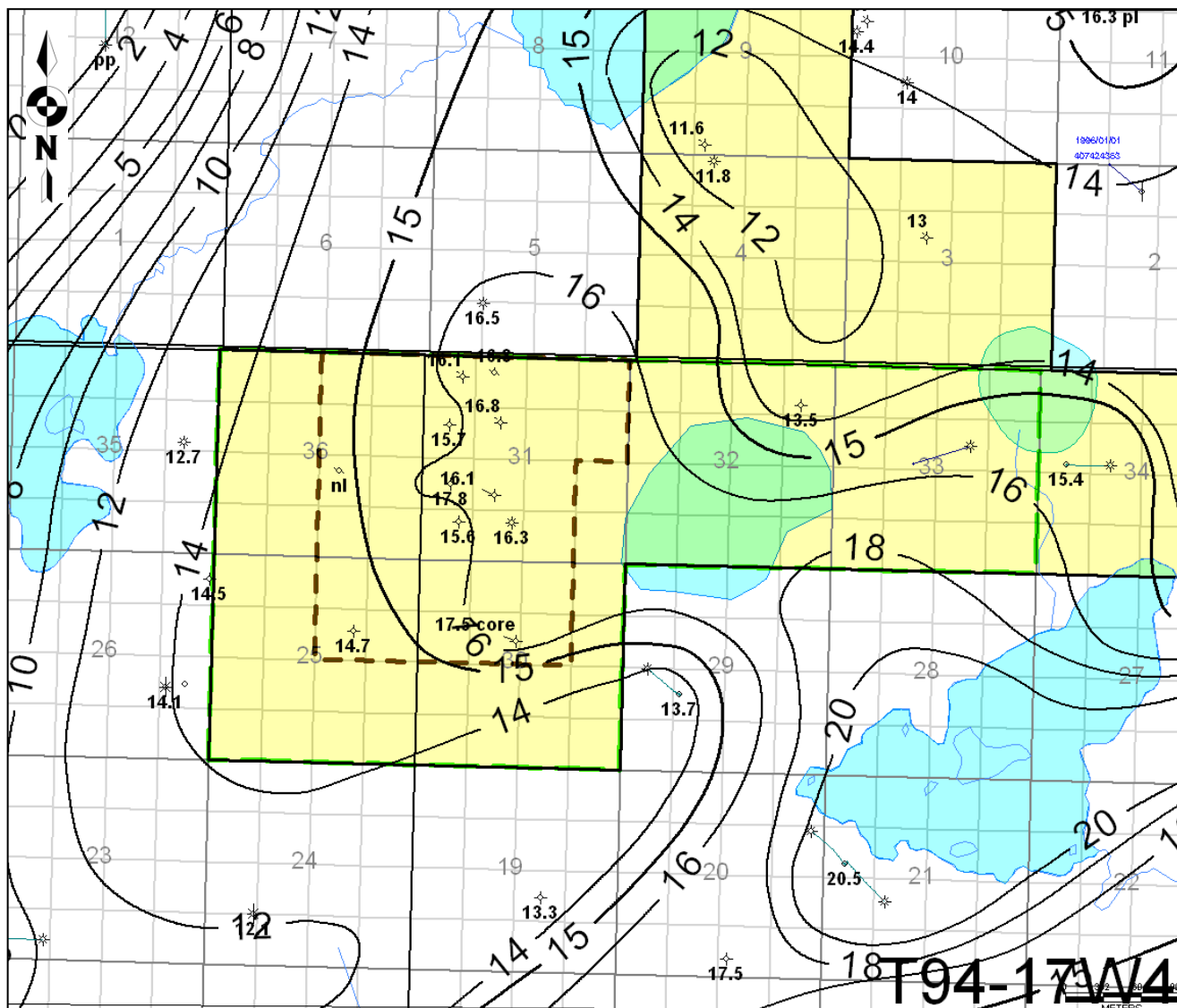
West Ells SAGD Project

TITLE:



Wabiskaw Net Bitumen Isopach
Cl: 2m

By: PC

Figure:
2.2-6



Legend

-  Project Development Area
-  Project Area



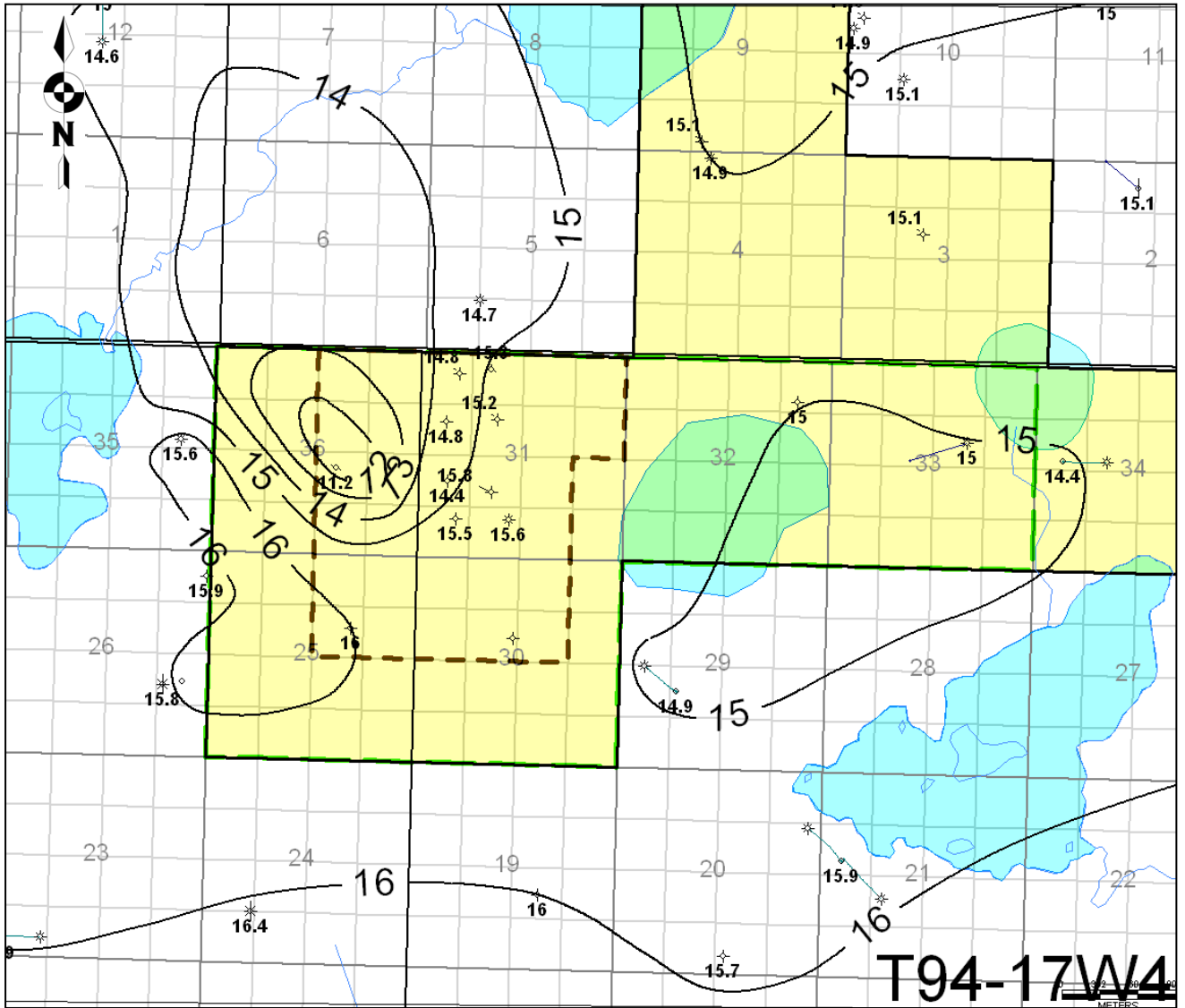
West Ells SAGD Project

TITLE:



Wabiskaw Net Continuous Bitumen Isopach
Cl: 2m

By: PC

Figure:
2.2-7



Legend

-  Project Development Area
-  Project Area



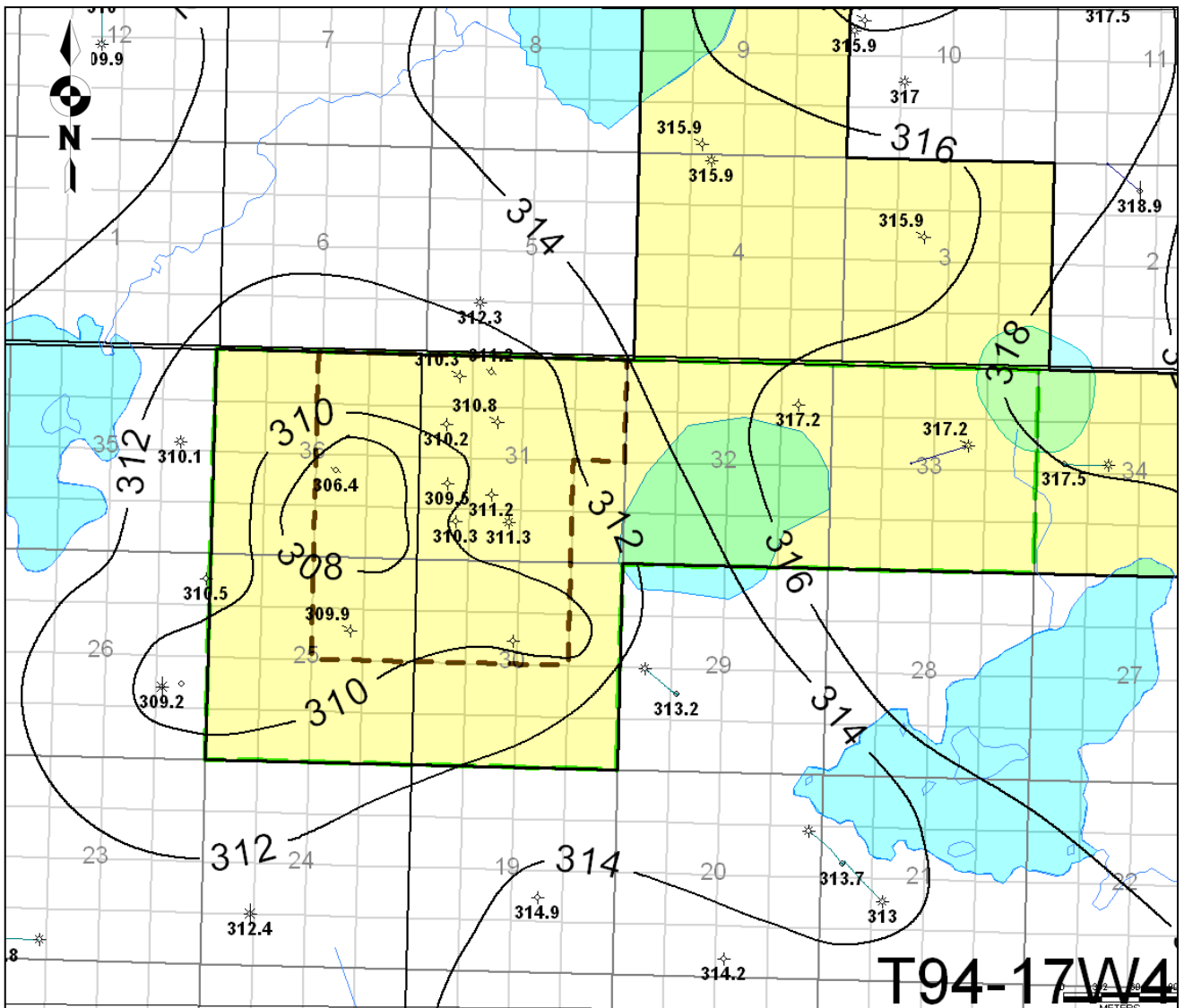
West Ells SAGD Project

TITLE:



Wabiskaw Shale Member Isopach
Cl: 2m

By: PC

Figure:
2.2-8



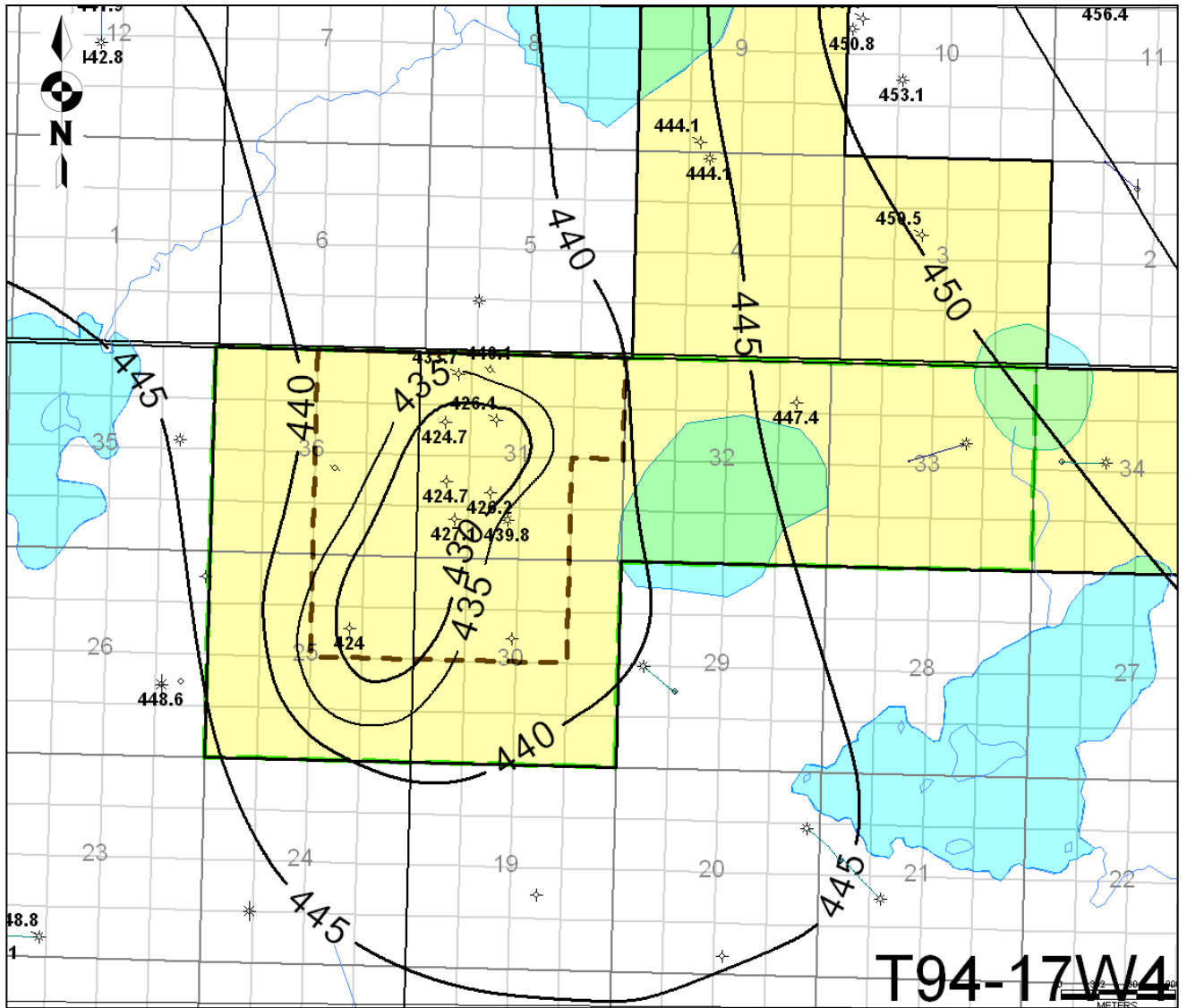
Legend

-  Project Development Area
-  Project Area





West Ells SAGD Project

TITLE:	Wabiskaw Shale Member Structure	Figure:	2.2-9
	Cl: 2m (Contours are in Meters Above Sea Level)	By: PC	



Legend

-  Project Development Area
-  Project Area



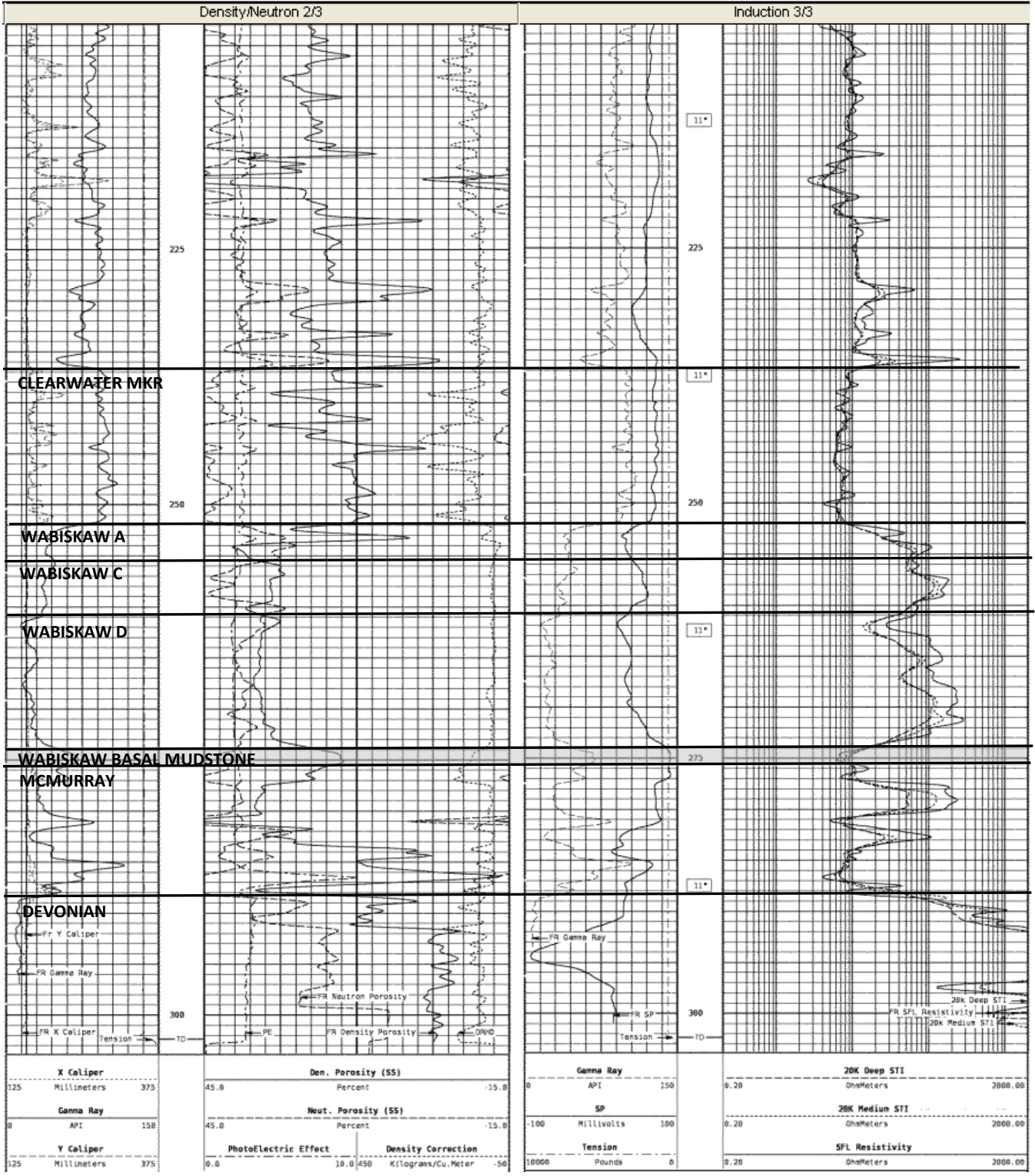
West Ells SAGD Project

TITLE: **Structure on the Upper Grand Rapids Formation**

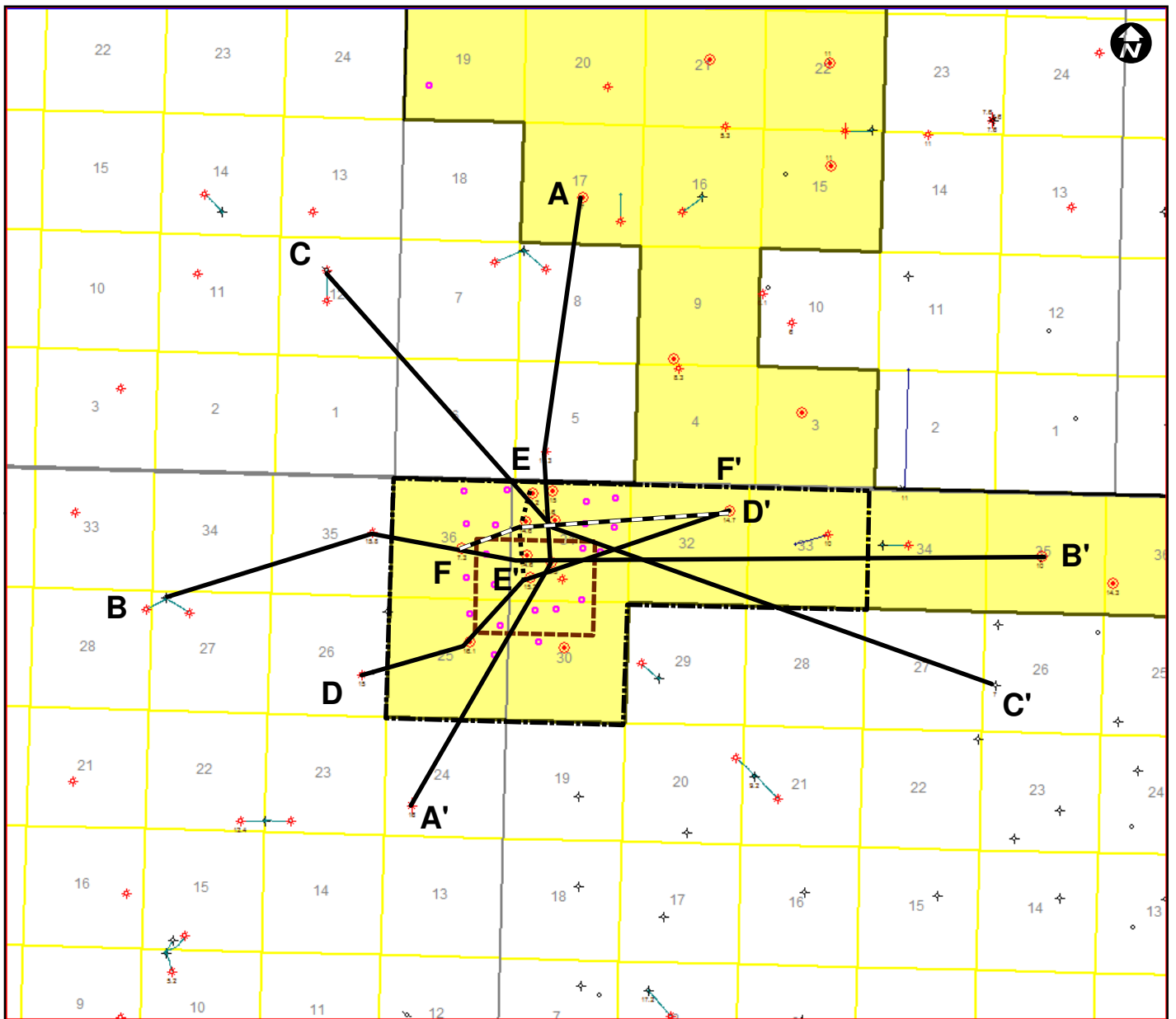
CI: 5m (Contours are in Meters Above Sea Level) By: PC



Figure:

2.2-10



West Ells SAGD Project



-  Project Development Area
-  Project Area



West Ells SAGD Project

TITLE:

Cross Section Location Map

DRAWN: PS

CHECKED: KY

DATE: Nov 27/08

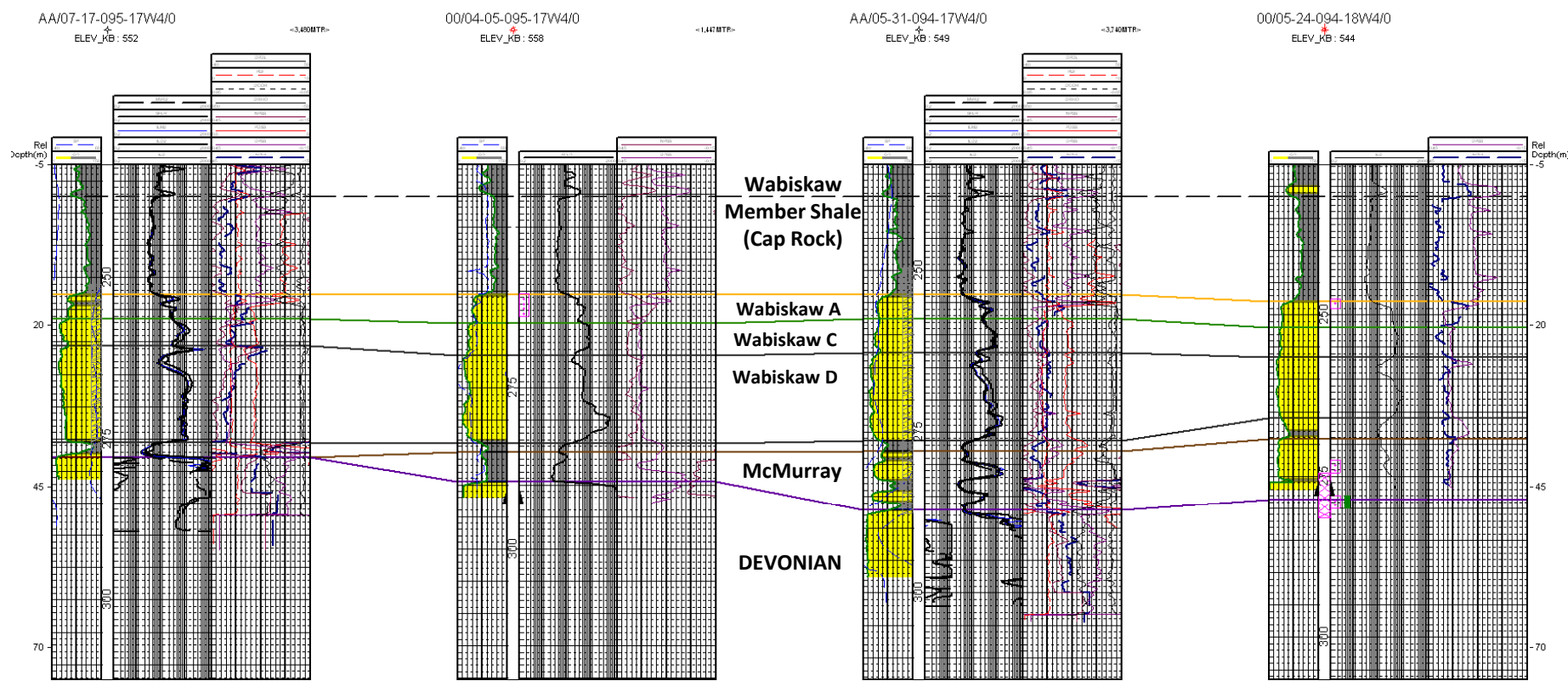
PROJECT: 08-015


FIGURE:

2.2-12

A

A'



	West Eils SAGD Project	
	TITLE: Cross Section A – A'	Figure: 2.2-13

B

B'

00/09-35-094-18W4/0

ELEV_KB : 558

<2,130MTR>

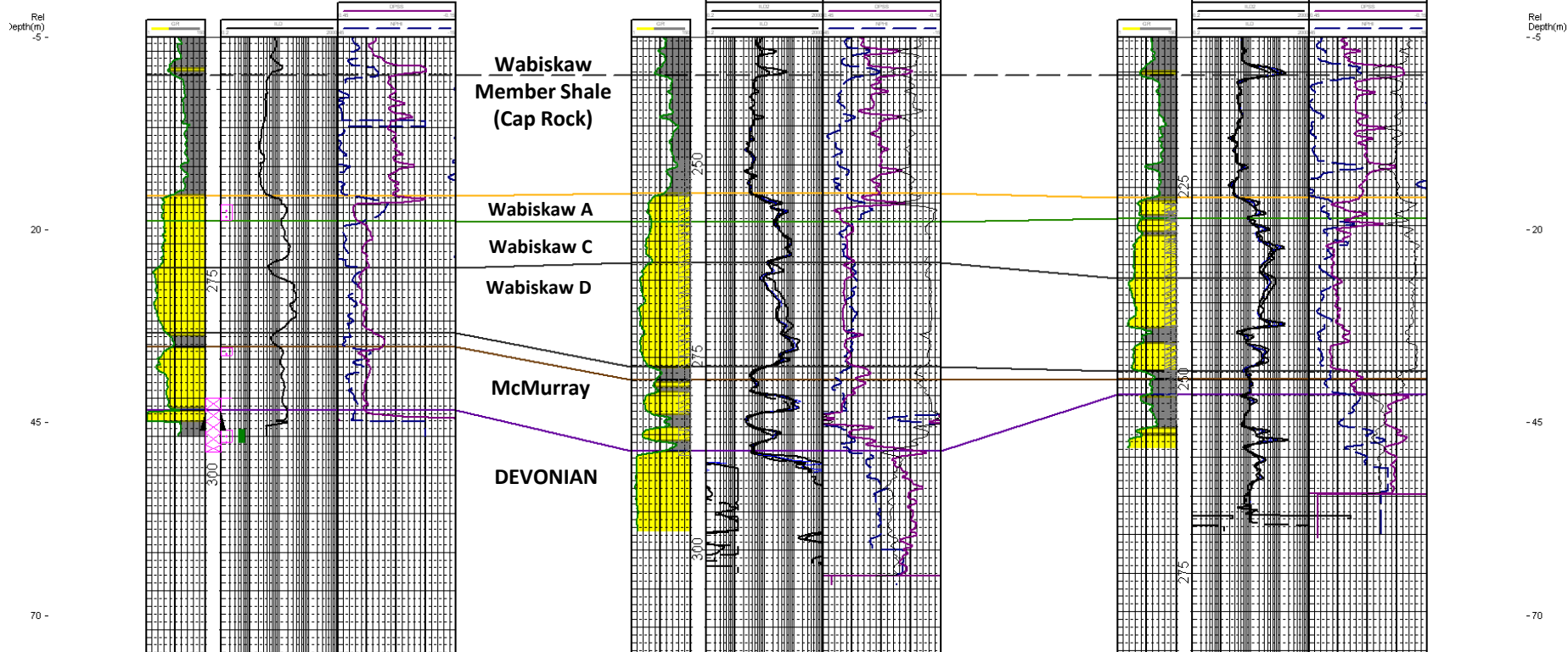
AA/05-31-094-17W4/0

ELEV_KB : 549

<7,031MTR>

AA/06-35-094-17W4/0

ELEV_KB : 531



West Eils SAGD Project

TITLE:

Cross Section B - B'

Figure:

2.2-14

C

C'

00/11-12-095-18W4/0
ELEV_KB : 576

-4.142BTP-

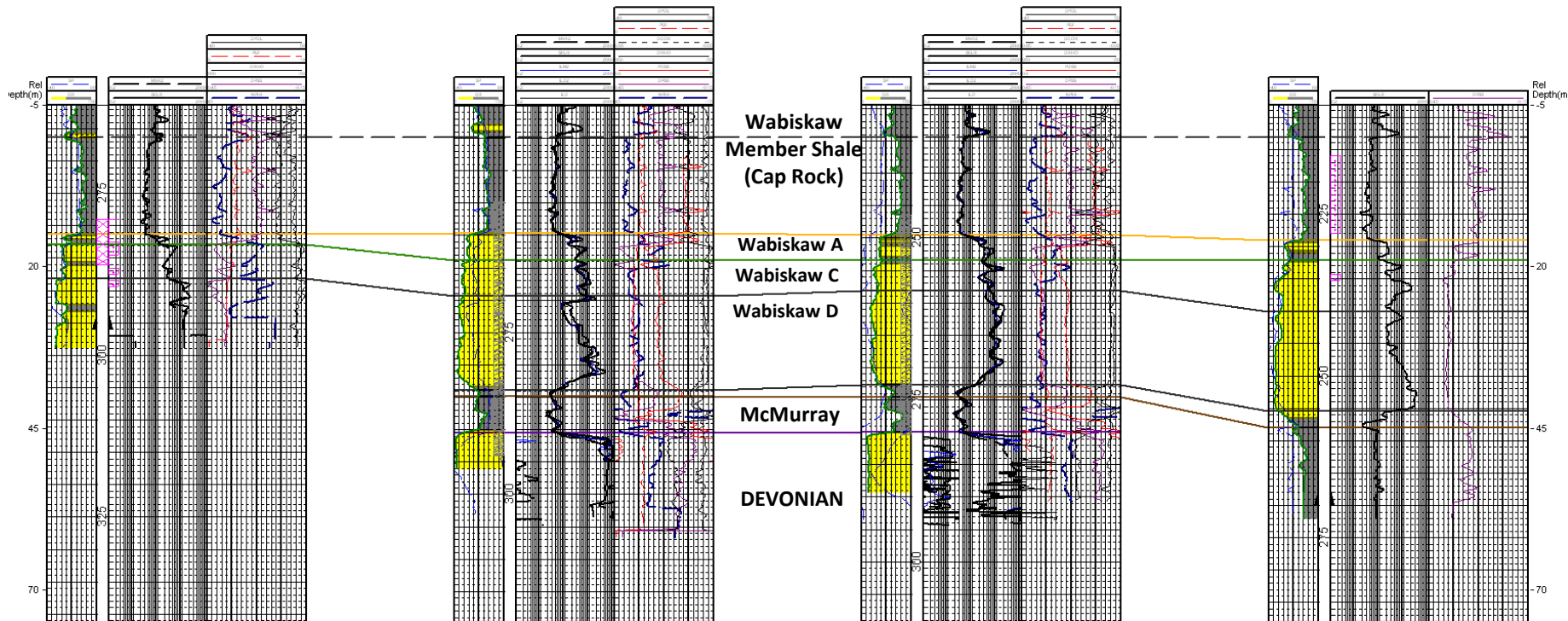
AA/13-31-094-17W4/0
ELEV_KB : 555

-4.22BTP-

AA/11-31-094-17W4/0
ELEV_KB : 545

-6.510BTP-

00/05-26-094-17W4/0
ELEV_KB : 530



West Eils SAGD Project

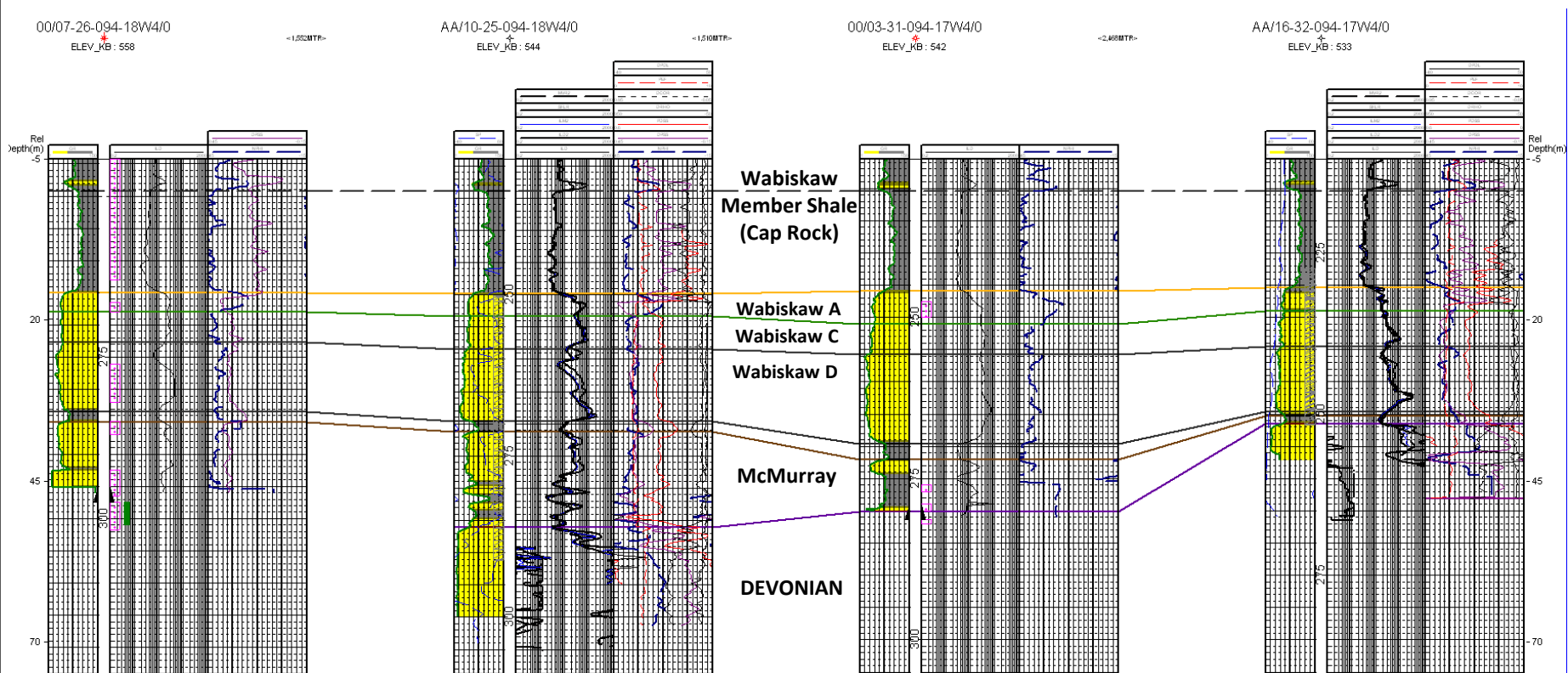
TITLE:

Cross Section C - C'

Figure:
2.2-15

D

D'

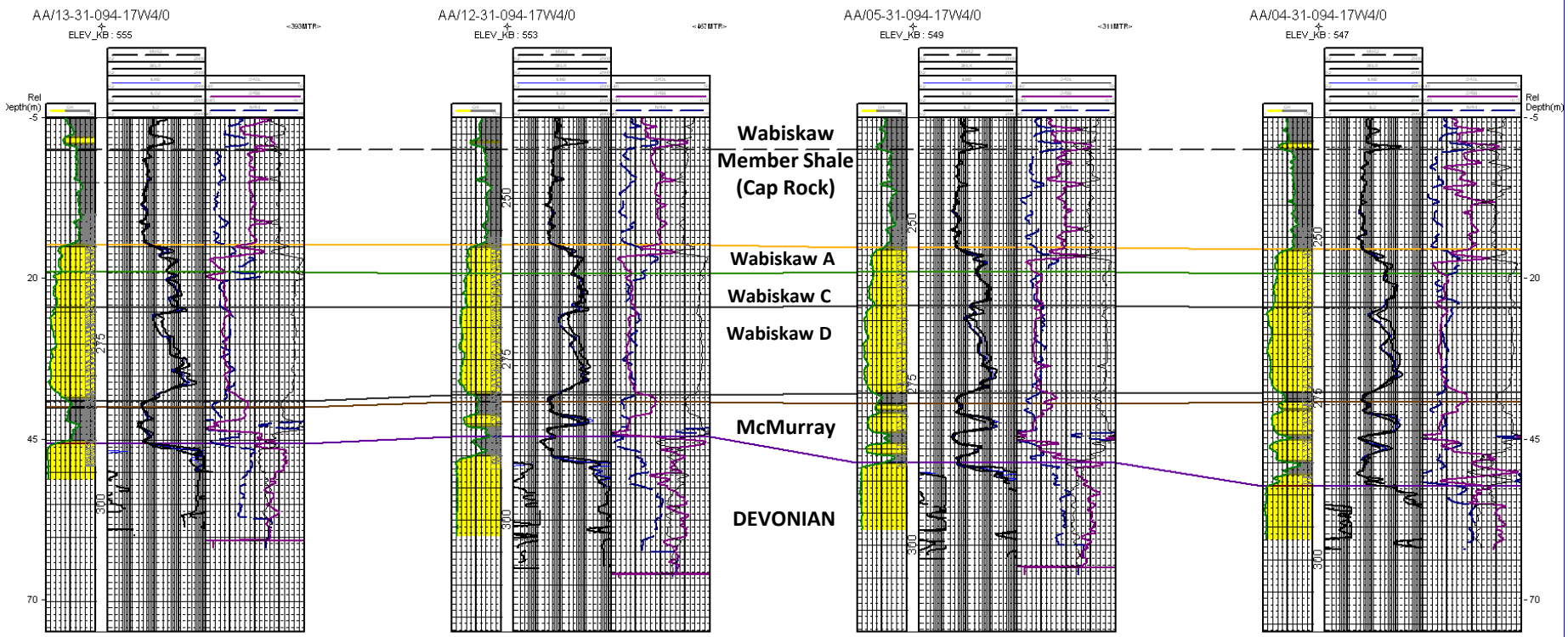


West Eils SAGD Project

TITLE:

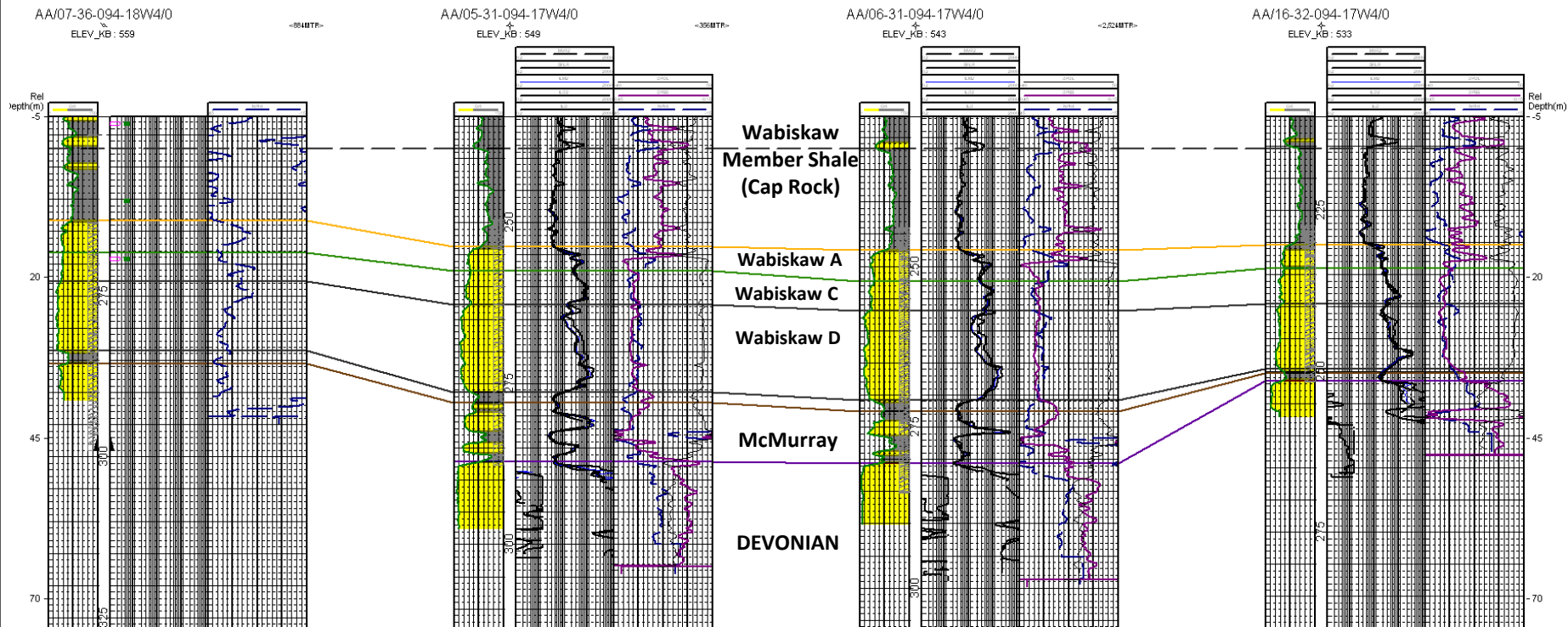
Cross Section D - D'

Figure:
2.2-16



F

F'



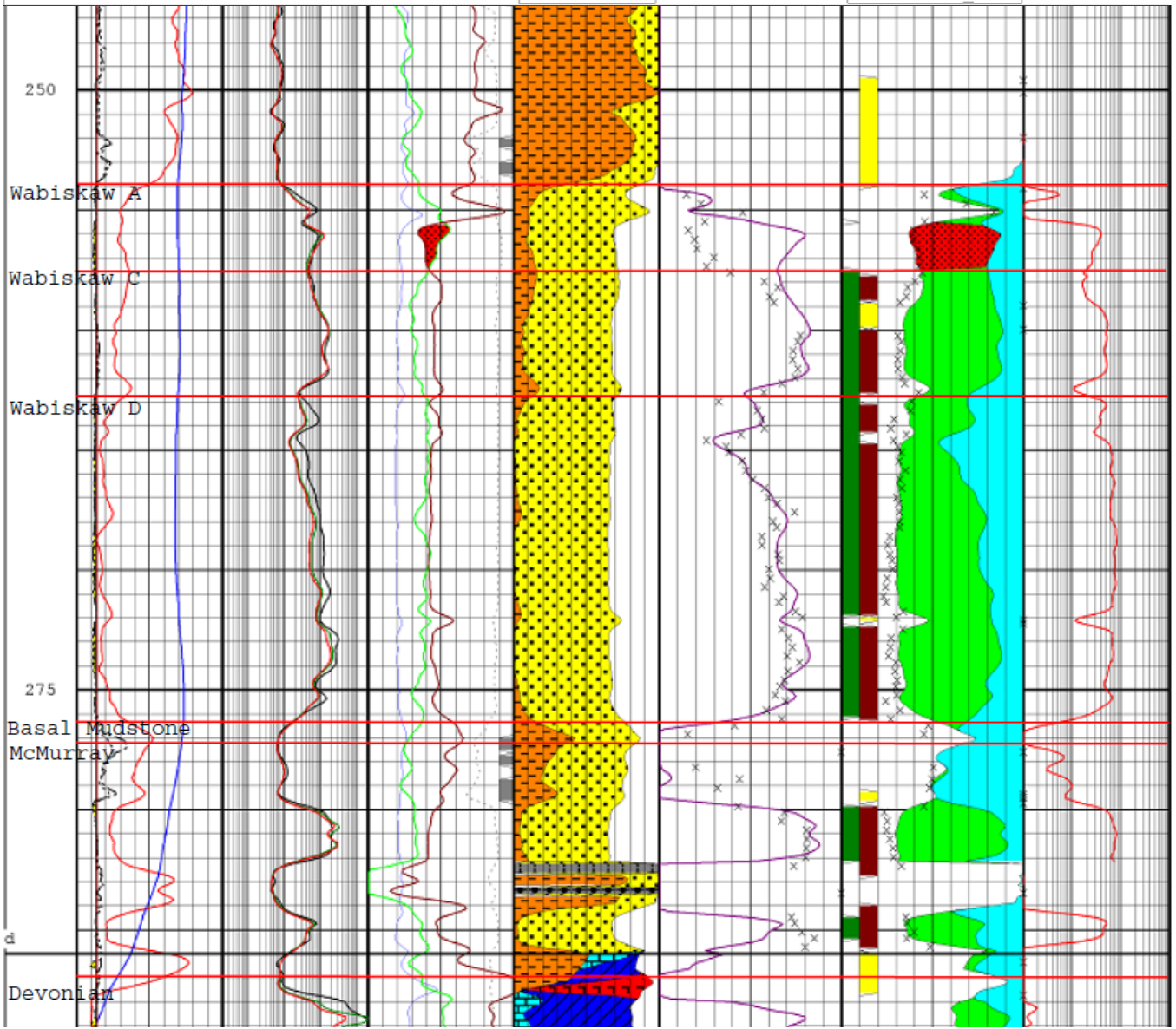
West Eils SAGD Project


TITLE:

Cross Section F – F'

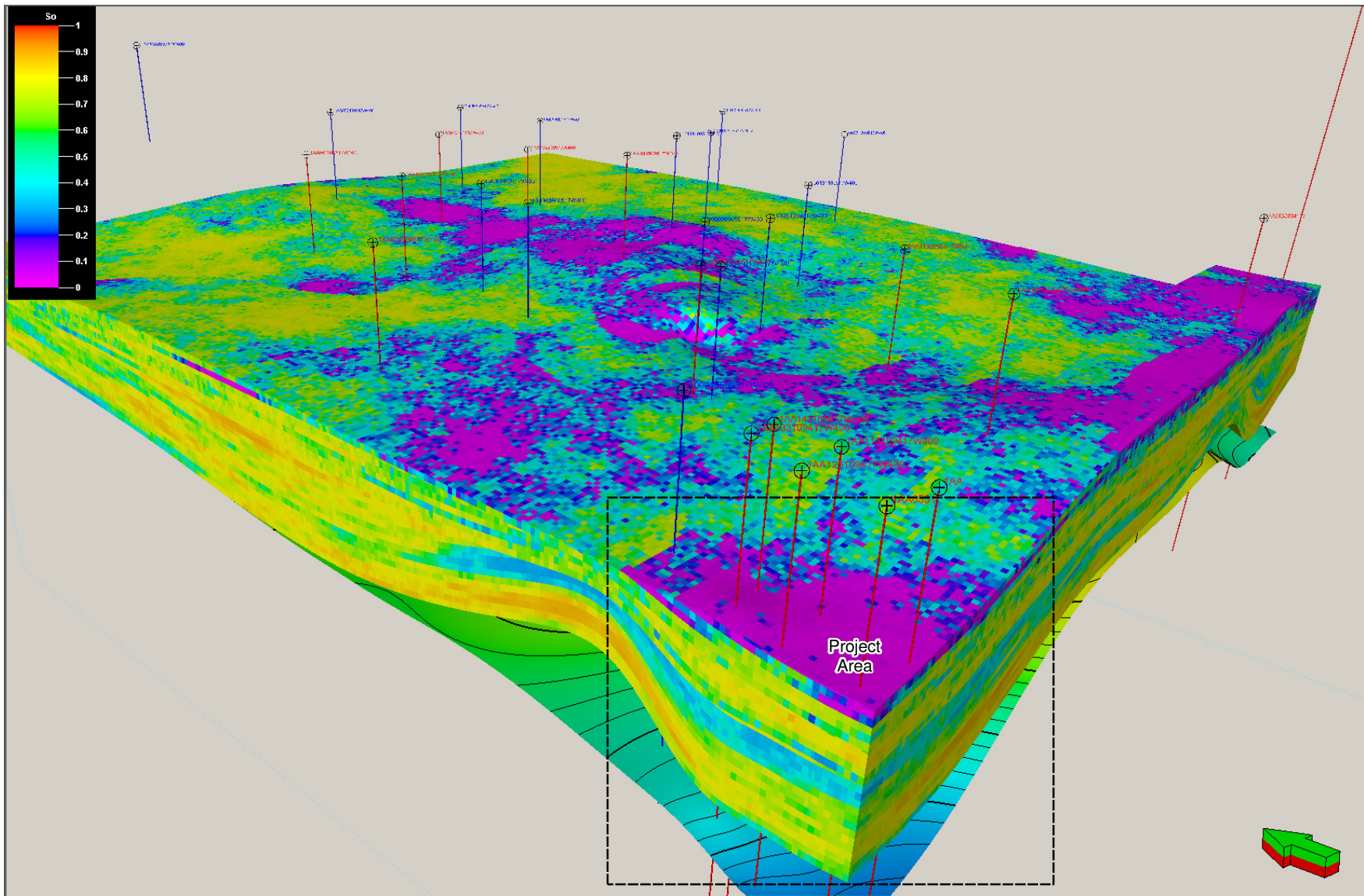
Figure:
2.2-18

DEPTH M	GR API 150	SFLR OHMM2000 0.2	PEF 10	VCLC dec 1	SW dec 0	PHIE dec 0	PERM WR 100 MED0000
	SP mV 50	ILM2 OHMM2000 0.2	PNSS dec 0	VSS dec 1	SW CORE dec x 0	BVW dec 0	
	BITS mm 375	ILD2 OHMM2000 0.2	PDSS dec 0	VLS DEC 1	SW	PAYFLAG 10	
	CAL1 mm 375	DCOR 0.9 gm/cc-0.1	BHFLAG flg 0	VDOL DEC 1		BVW GAS dec 0	
	CAL2 mm 375			VANH DEC 1		PAYFLAGC -1	
	CAL1 BITS		PDSS PNSS	VCOAL dec 1		POR CORE dec x 0	
	CAL2 BITS		BHFLAG 0	VCLC		NO CORE dec 9	
				VCLC VSS		PHIE BVW	
				VSS 1		BVW 0	
				VSS VLS		PAYFLAG	
				VLS VDOL		PHIE BVW GAS	
				VDOL VANH		PAYFLAGC	
				VCOAL		NO CORE	




West Ells SAGD Project

TITLE:	Example of the Log Analysis Work for Well 1AA/05-31-094-17W4/00	Figure: 2.2-19
--------	---	----------------



West Ells SAGD Project

TITLE:

West Ells Oil Saturations (Petrel Model)

DRAWN: SL

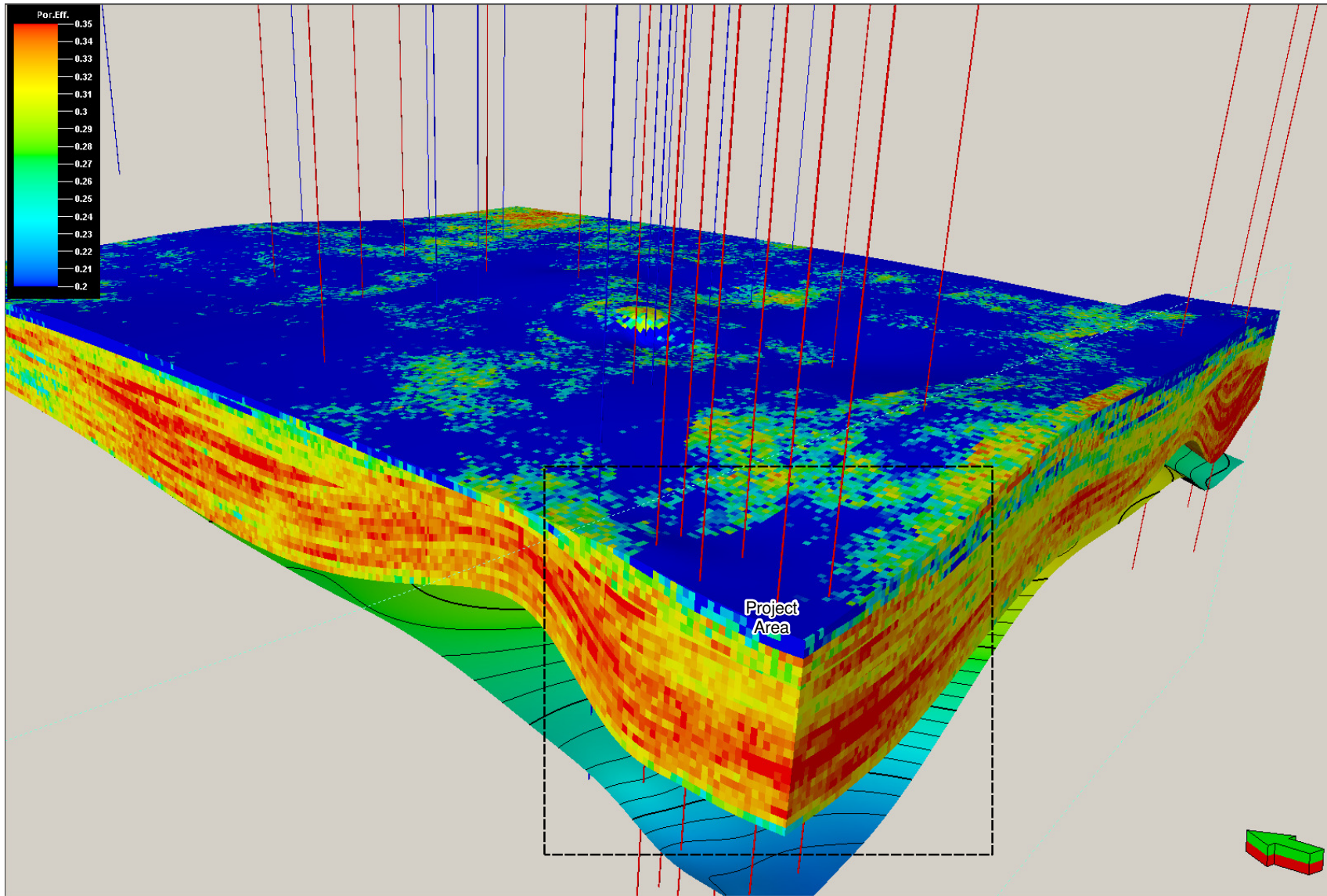
CHECKED: KY

DATE: Nov 27/08

PROJECT: 08-015

FIGURE:

2.2-20



West Ells SAGD Project

TITLE:

West Ells Effective Porosities (Petrel Model)

DRAWN: SL

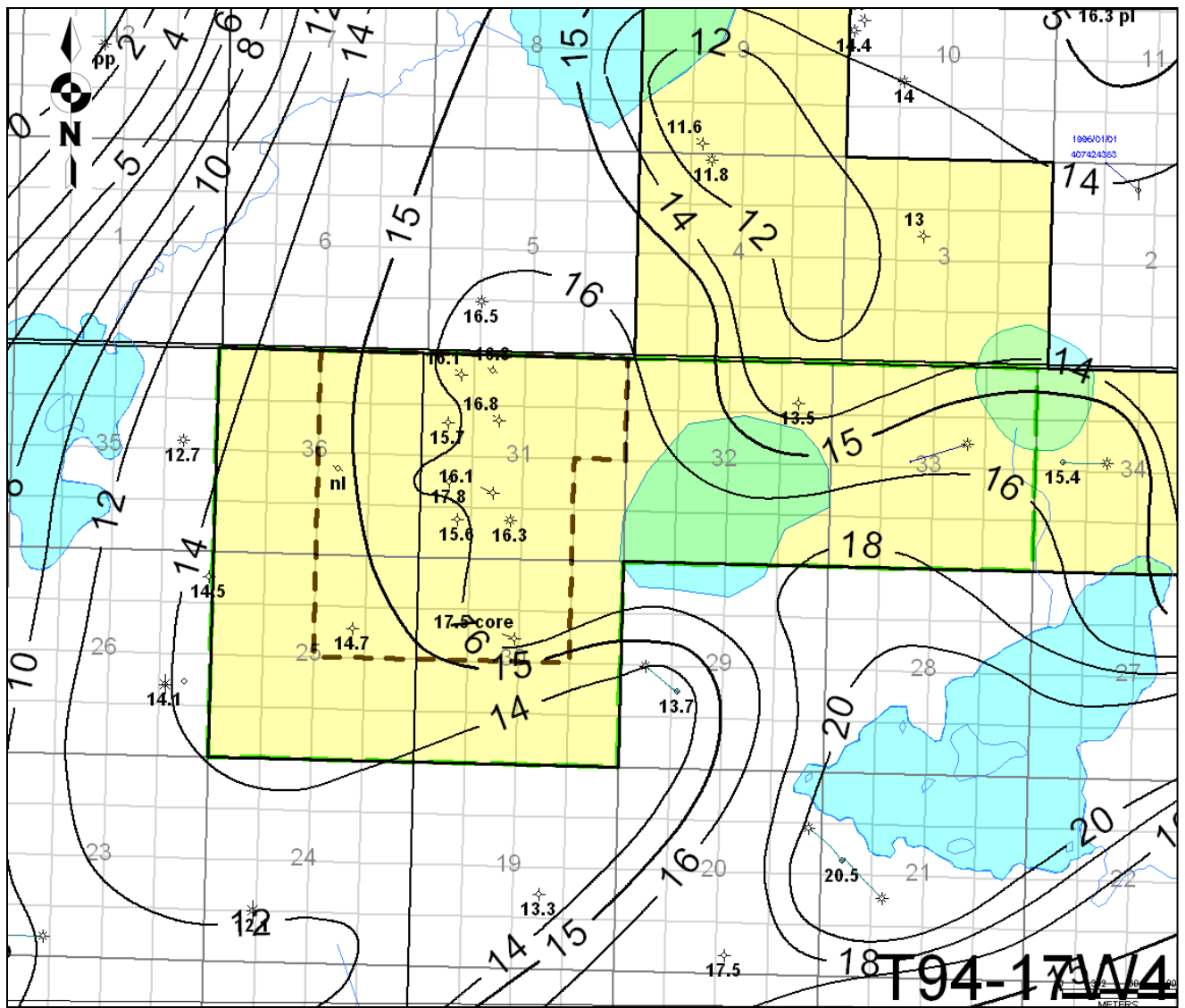
CHECKED: KY

DATE: Nov 27/08

PROJECT: 08-015



FIGURE:

2.2-21



Area	Classification	Area (Km2)	Net Pay (m)	Porosity (f)	Sw (f)	FVF	OBIP (MMSTB)	OBIP (MMm3)
West Eils Project	Net Pay > 10m	15.7	14.9	0.32	0.22	1.005	378.16	60.12

Legend

-  Project Development Area
-  Project Area



West Eils SAGD Project

TITLE:

Project Development Area OBIP

Drawn By:

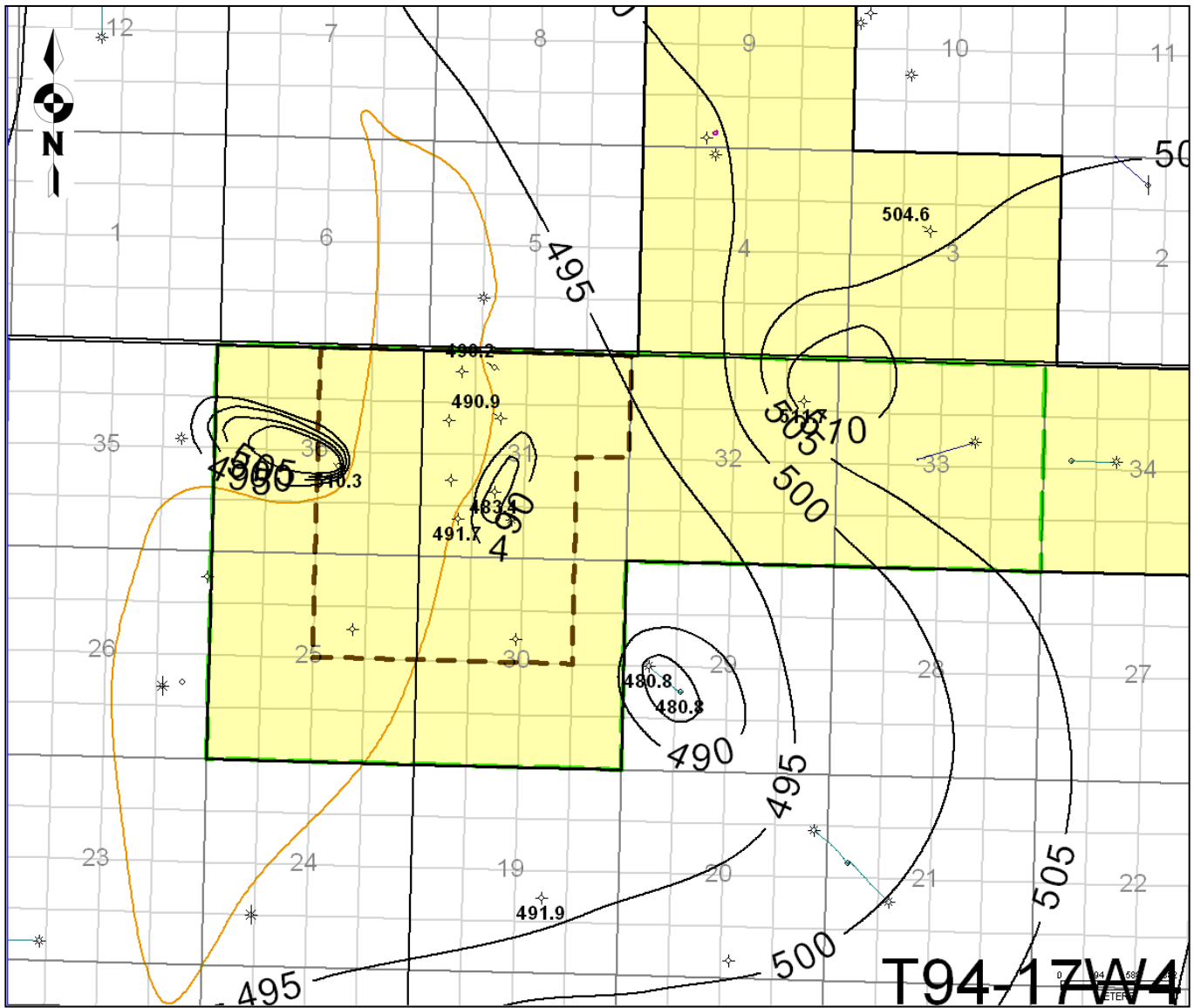
DH

Date:



Nov 2009

Figure:

2.2-22



Legend

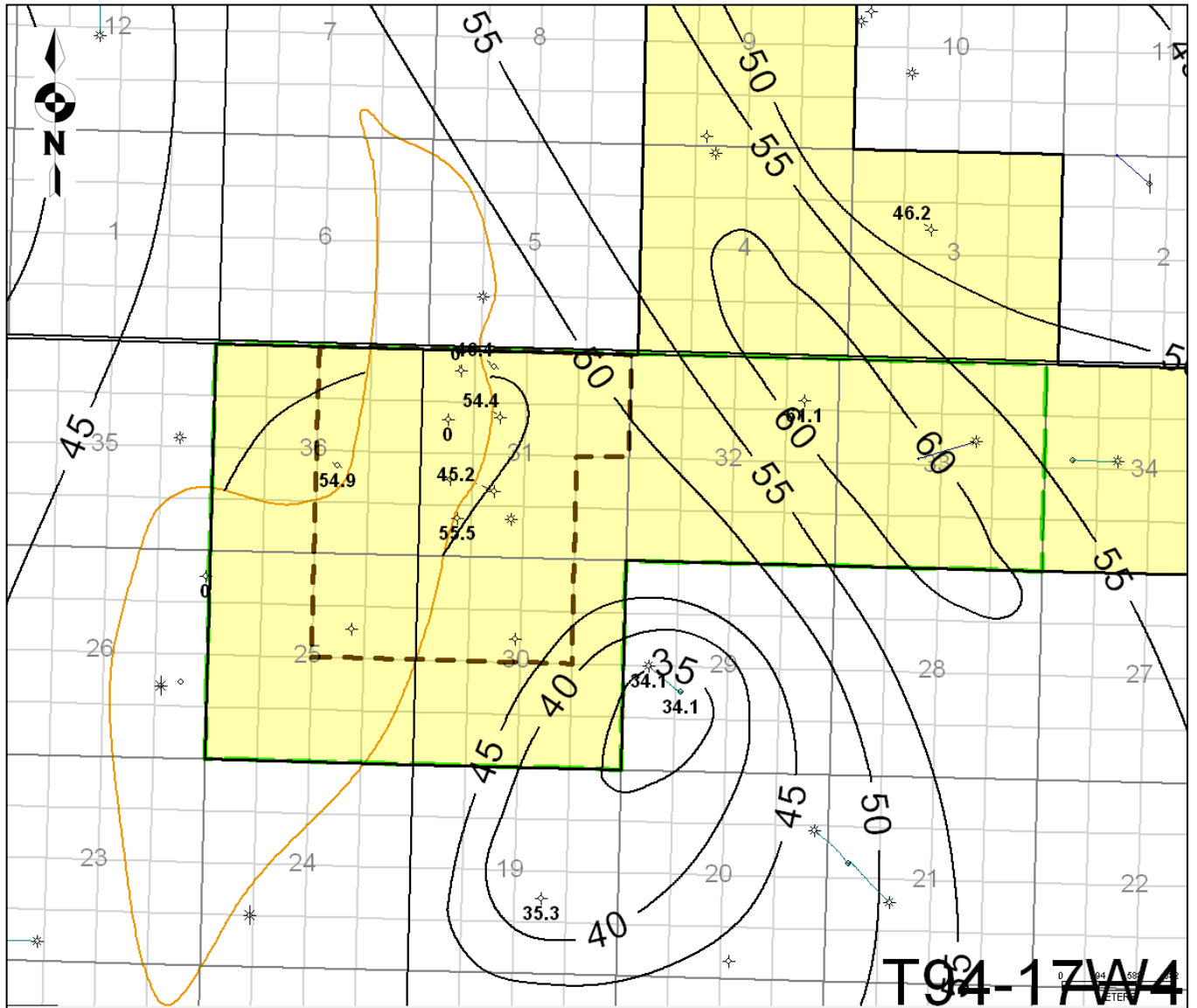
-  Project Development Area
-  Project Area





West Ells SAGD Project

TITLE: **Structure on Viking Sandstone**

Figure:
2.2-23



Legend

-  Project Development Area
-  Project Area

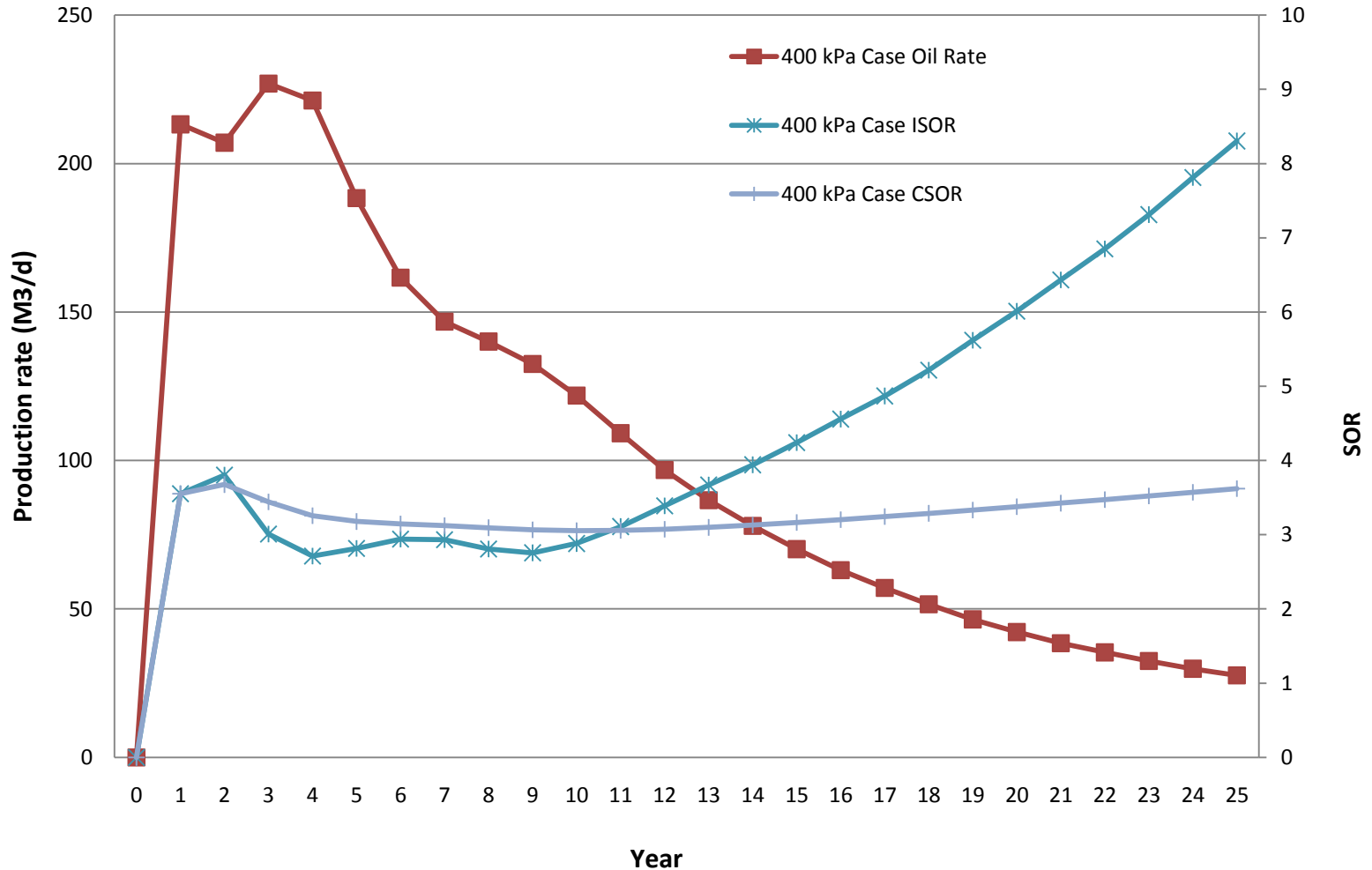



West Ells SAGD Project

TITLE: **Viking Sandstone Isopach**

Figure:
2.2-24

5 Well Production Forecast

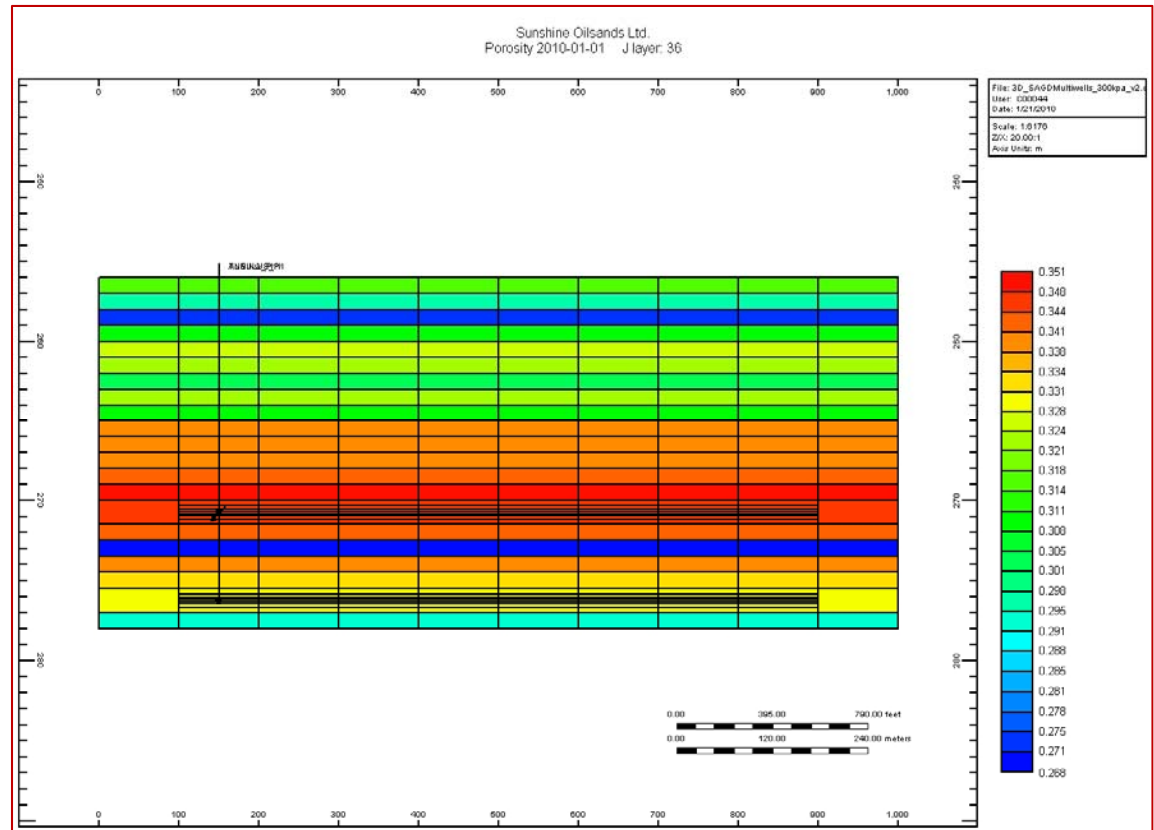


	West Ells SAGD Project	
	TITLE: 5 Well Pair Production Profile	Drawn By: TW Date: Nov 2009
		Figure: 2.3-1

Porosity in the vertical K-direction

Average grid porosity is 32%

Layer 1	0.315
Layer 2	0.295
Layer 3	0.274
Layer 4	0.309
Layer 5	0.327
Layer 6	0.324
Layer 7	0.303
Layer 8	0.324
Layer 9	0.310
Layer 10	0.338
Layer 11	0.339
Layer 12	0.340
Layer 13	0.344
Layer 14	0.351
Layer 15	0.347
Layer 16	0.343
Layer 17	0.268
Layer 18	0.341
Layer 19	0.334
Layer 20	0.328
Layer 21	0.292



West Ells SAGD Project

TITLE:

Porosity in the vertical K-direction

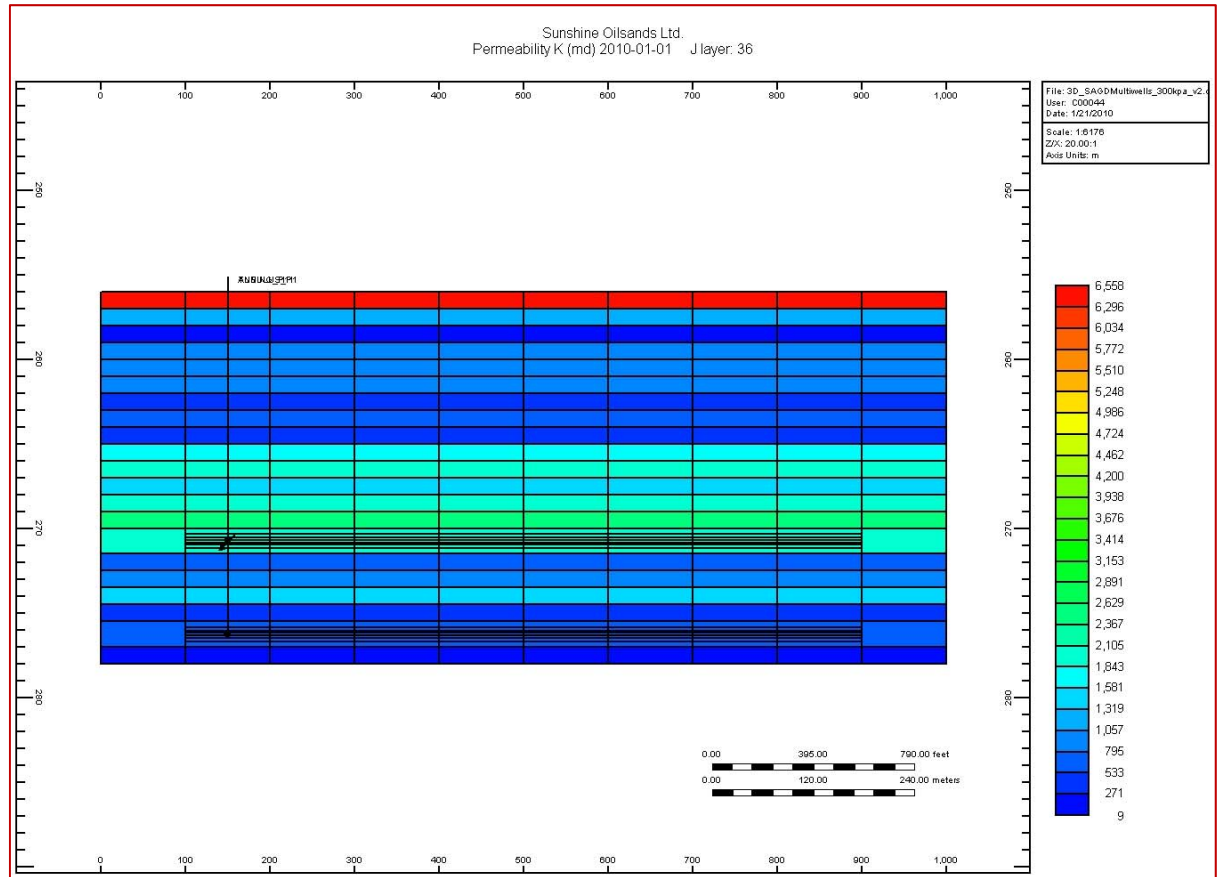
Drawn By:
TW
Date:
Nov 2009

Figure:
2.3-2

Permeability in Vertical K-direction

Average grid permeability in K-direction is 1.35 D

Layer 1	6558
Layer 2	1287
Layer 3	210
Layer 4	910
Layer 5	837
Layer 6	867
Layer 7	283
Layer 8	556
Layer 9	325
Layer 10	1635
Layer 11	1942
Layer 12	1561
Layer 13	1988
Layer 14	2620
Layer 15	2102
Layer 16	619
Layer 17	997
Layer 18	1374
Layer 19	482
Layer 20	711
Layer 21	9



West Ells SAGD Project

TITLE:

Permeability in vertical K-direction

Drawn By:

TW

Date:

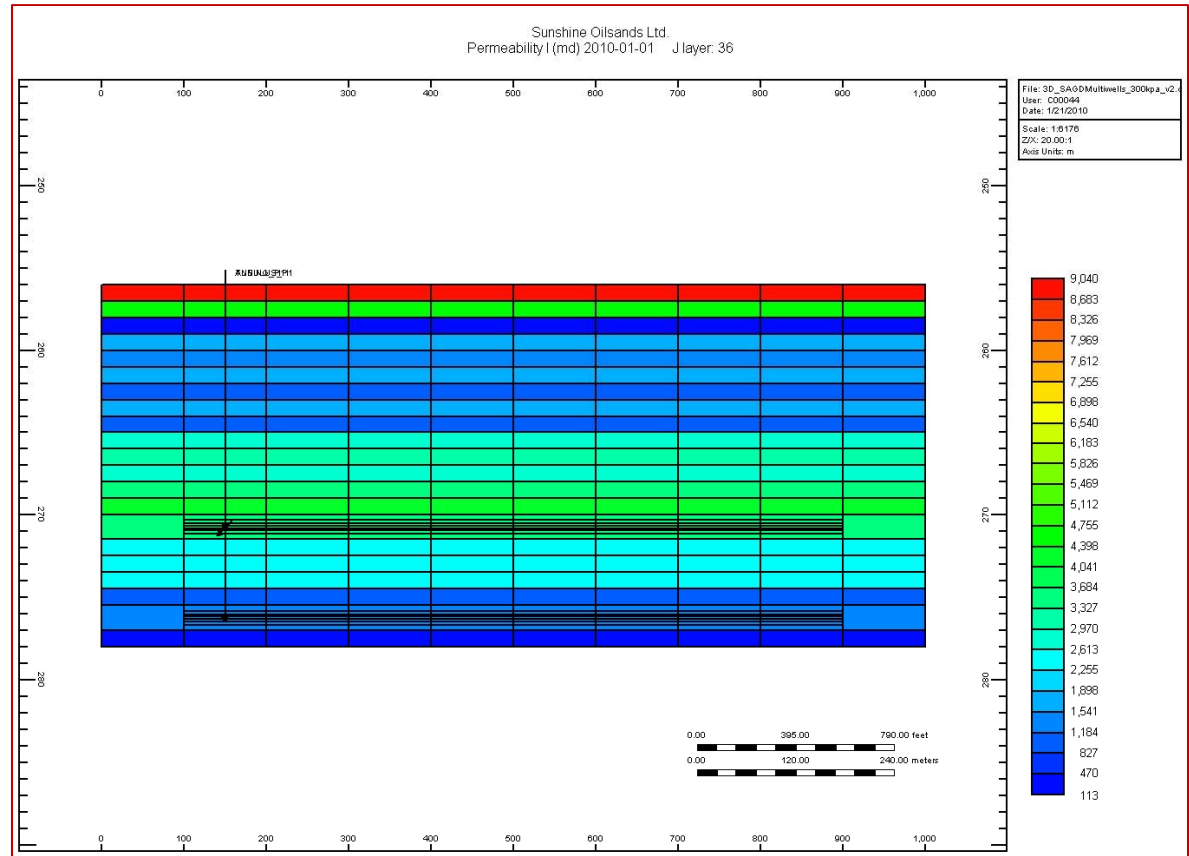
Nov 2009


Figure:
2.3-3

Permeability in Horizontal I-direction

Average grid permeability in I-direction is 2.50 D

Layer 1	9040
Layer 2	4503
Layer 3	447
Layer 4	1735
Layer 5	1523
Layer 6	1574
Layer 7	866
Layer 8	1661
Layer 9	1009
Layer 10	2802
Layer 11	3319
Layer 12	2692
Layer 13	3436
Layer 14	4276
Layer 15	3521
Layer 16	2416
Layer 17	2414
Layer 18	2413
Layer 19	990
Layer 20	1481
Layer 21	113

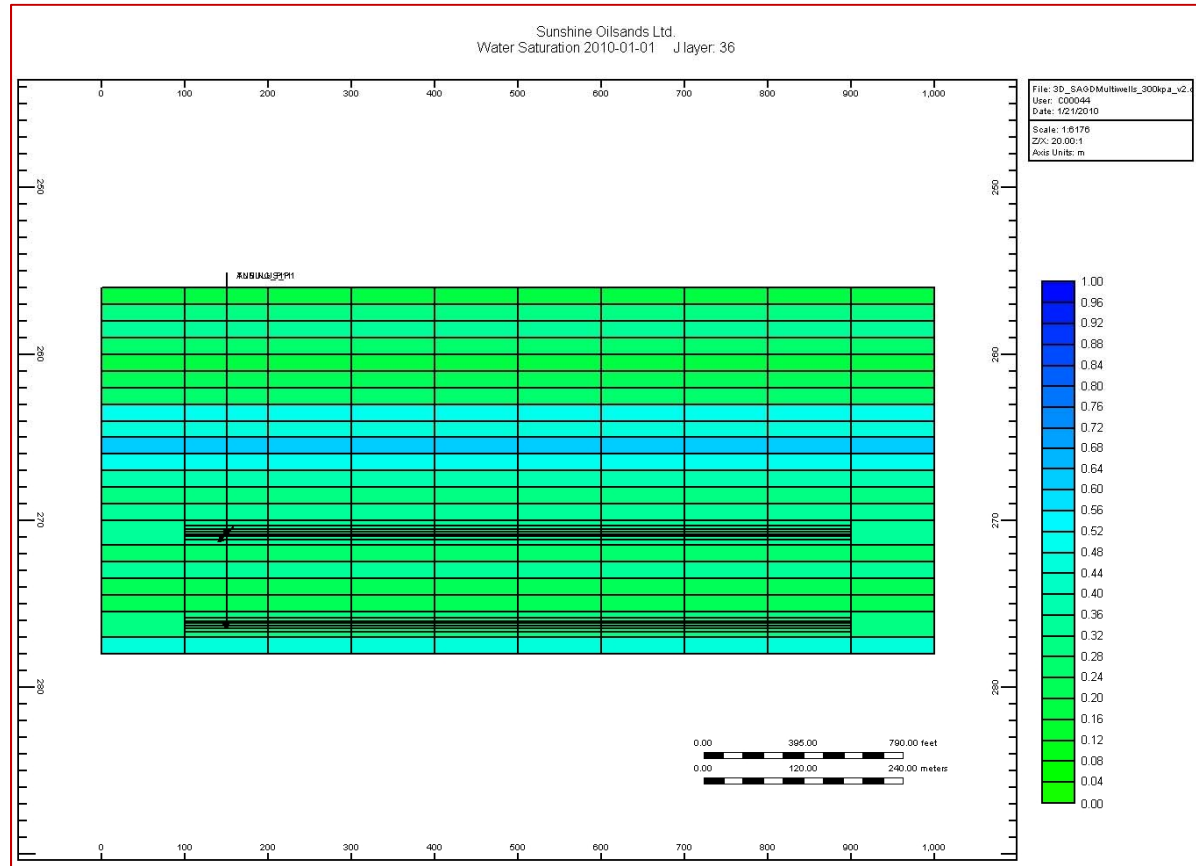


	West Ells SAGD Project	
	TITLE: Permeability in Horizontal I-direction	Drawn By: TW
	Date: Nov 2009	

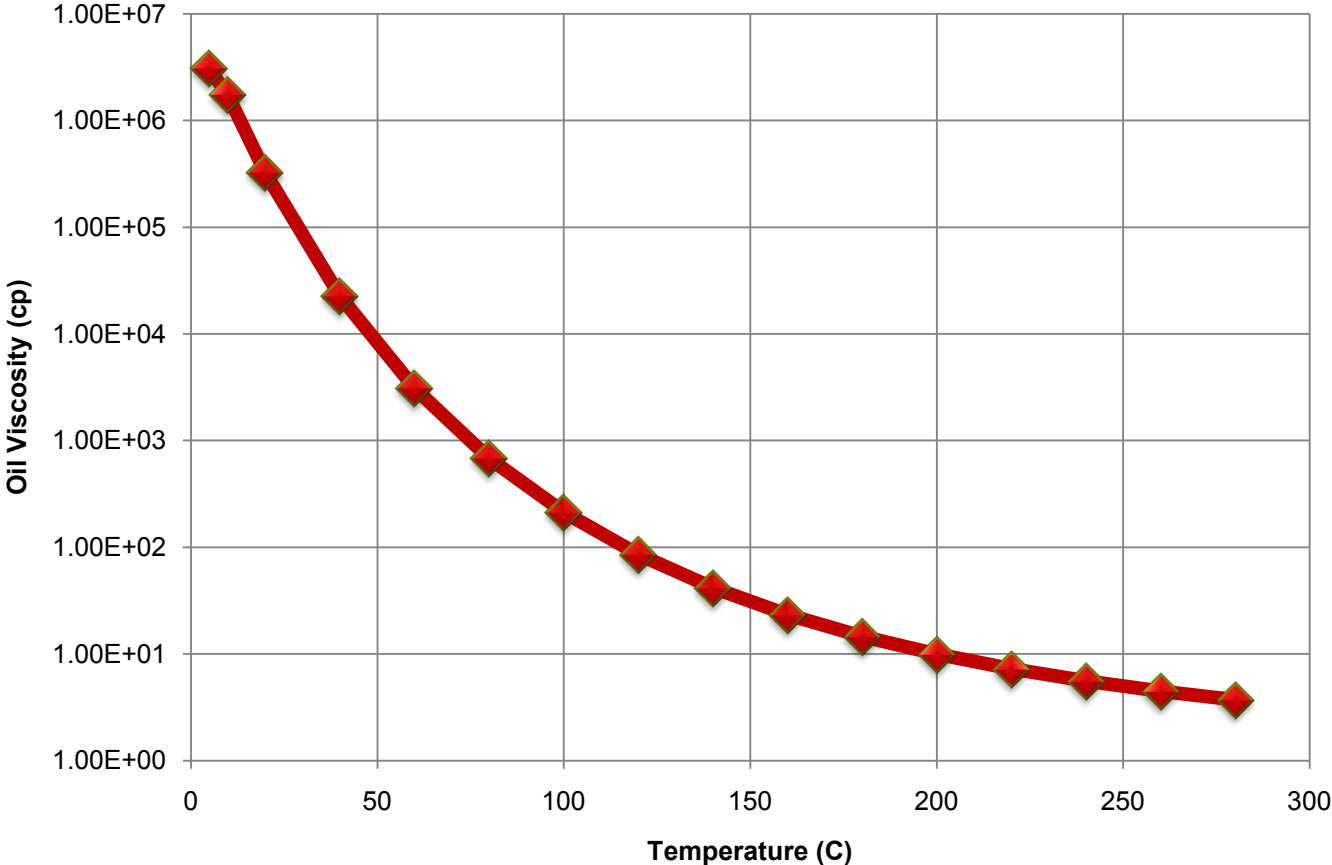
Water saturation in the Vertical K-direction

Average grid water saturation is 33%

Layer 1	0.198
Layer 2	0.318
Layer 3	0.334
Layer 4	0.253
Layer 5	0.172
Layer 6	0.218
Layer 7	0.251
Layer 8	0.481
Layer 9	0.463
Layer 10	0.639 (Lean Zone)
Layer 11	0.514
Layer 12	0.380
Layer 13	0.299
Layer 14	0.354
Layer 15	0.346
Layer 16	0.244
Layer 17	0.331
Layer 18	0.200
Layer 19	0.209
Layer 20	0.292
Layer 21	0.444



Oil Viscosity



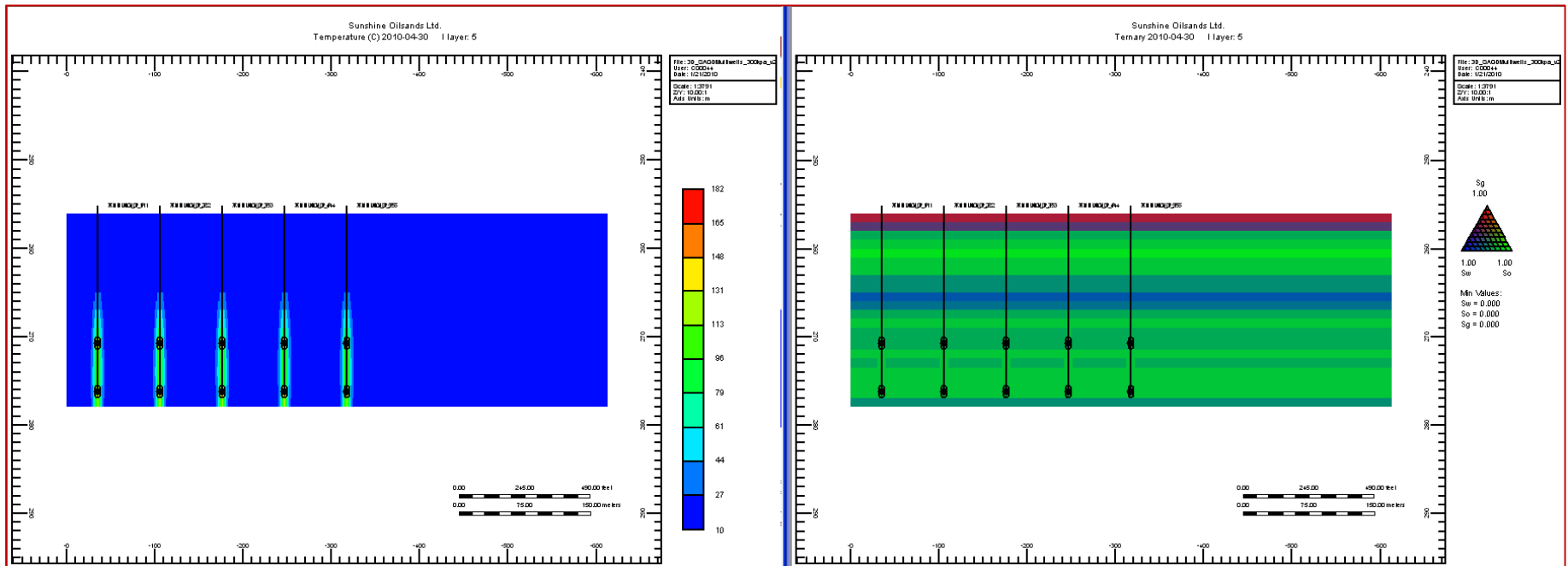
West Ells SAGD Project

TITLE: Bitumen Viscosity

Drawn By:
TW
Date:
Nov 2009

Figure:
2.3-6

End of Steam Circulation for 4 month

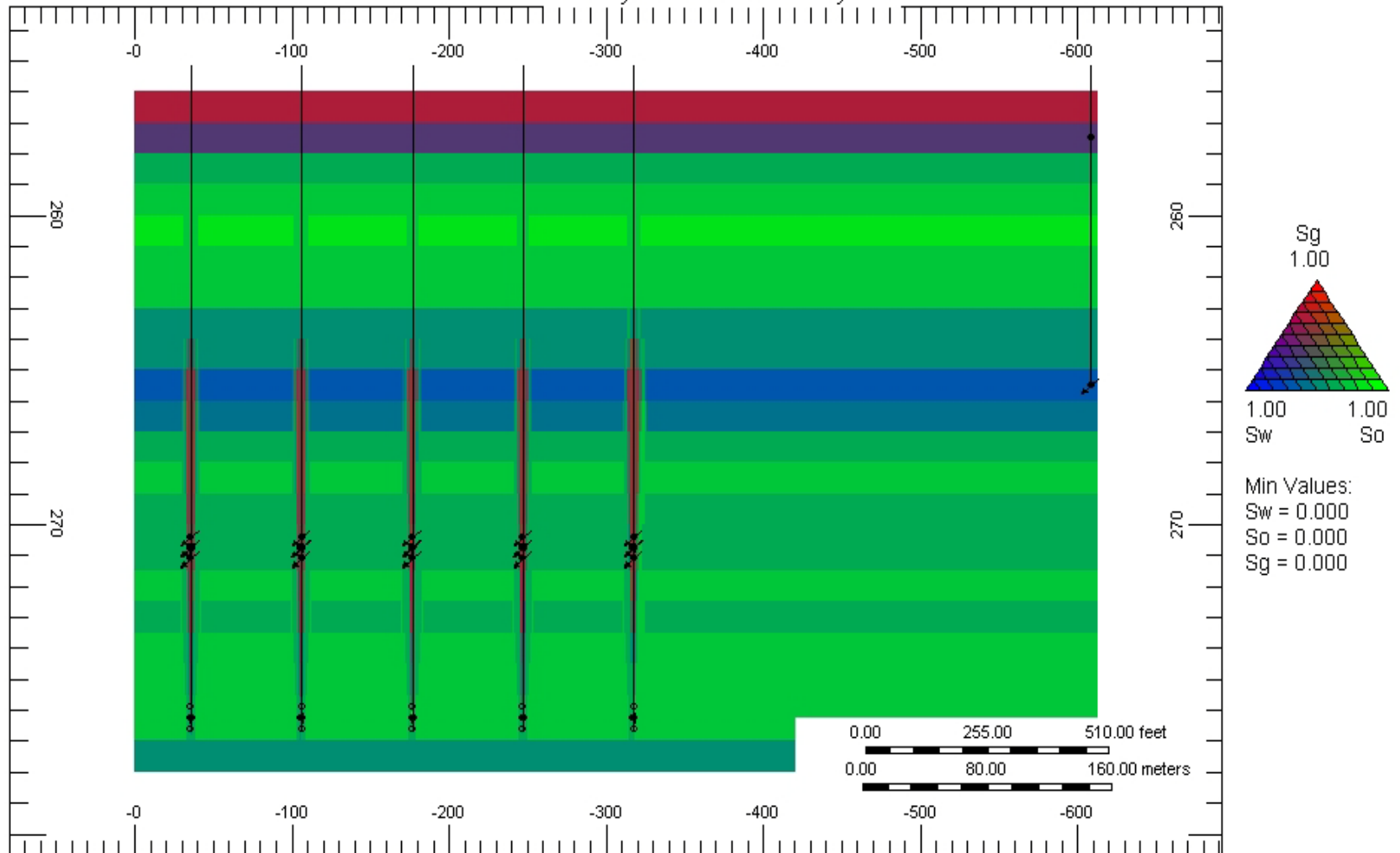


West Ells SAGD Project

TITLE: Well Placement and Steam Circulation

Drawn By:
TW
Date:
Nov 2009

Figure:
2.3-7



West Ells SAGD Project

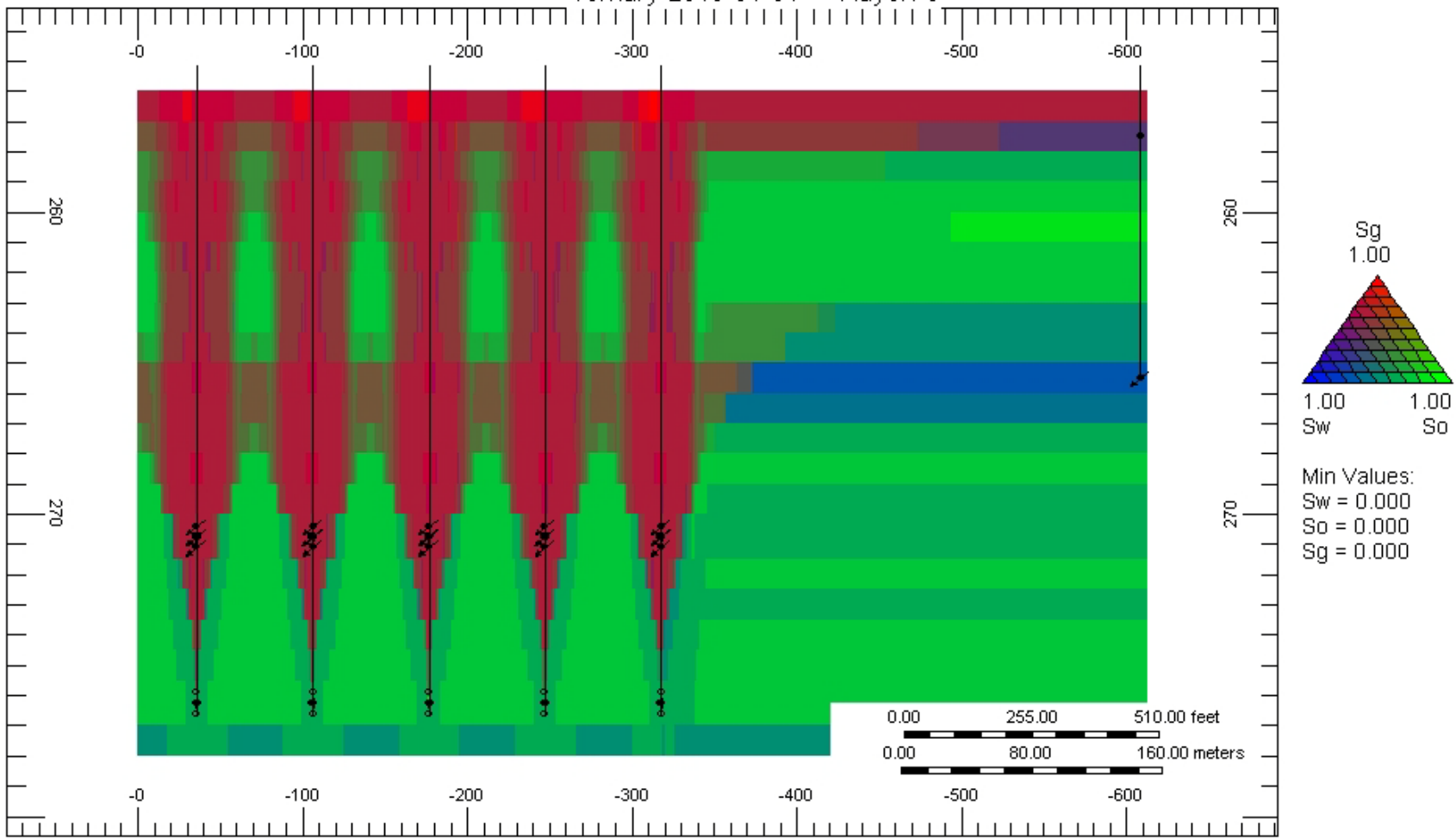
TITLE:


Start Steam Injection 400 Kpa

Drawn By:
TW
Date:
Nov 2009

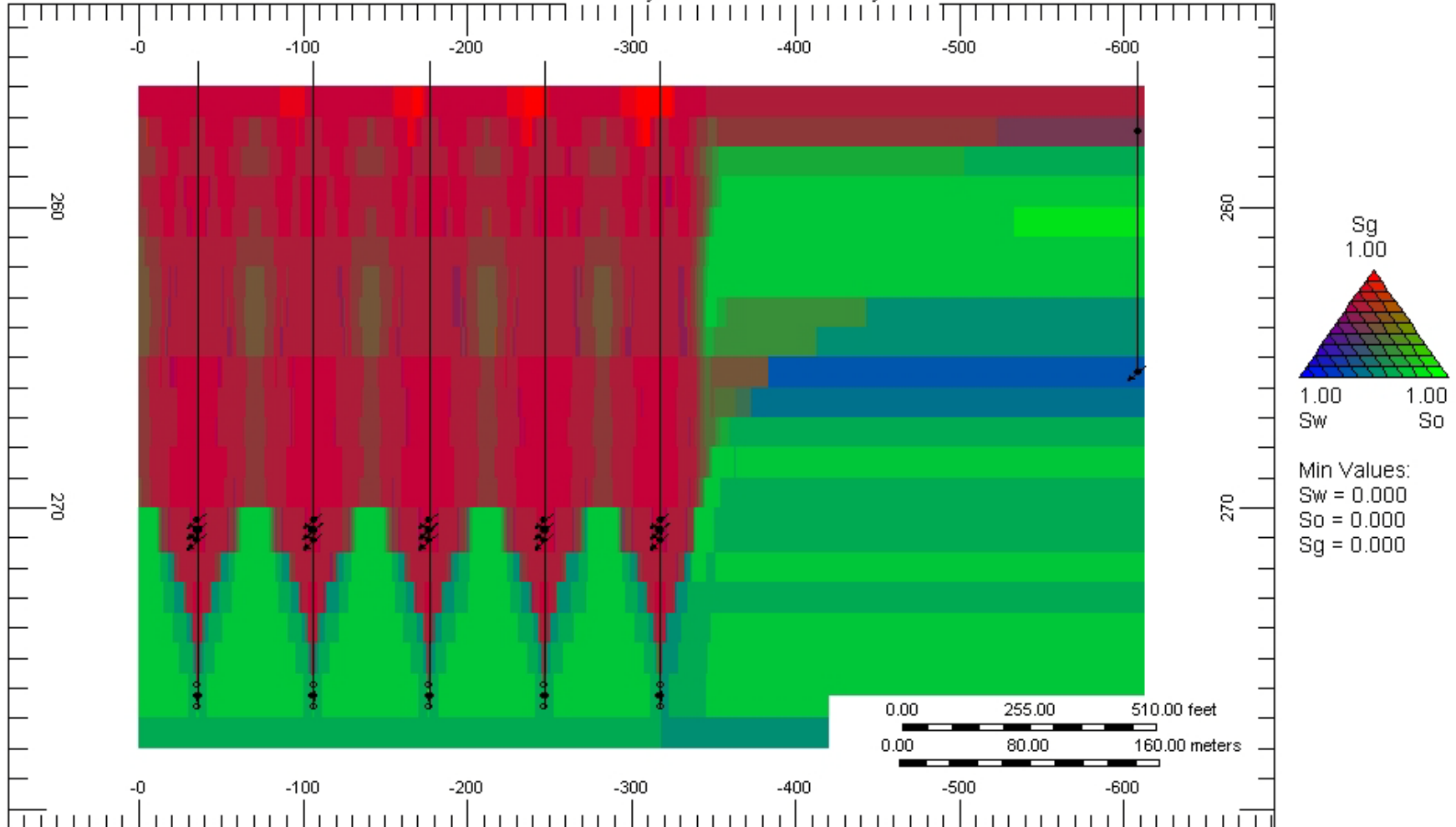
**Figure:
2.3-8**

Sunshine Oilsands Ltd.
Ternary 2016-01-01 | layer: 5



	West Ells SAGD Project	
	TITLE: Fig 2.3-9 Steam Chamber in Contact with Top Zone 400 Kpa	
	Drawn By: TW	Figure: 2.3-9
	Date: Nov 2009	

Sunshine Oilsands Ltd.
Ternary 2021-01-01 I layer: 5

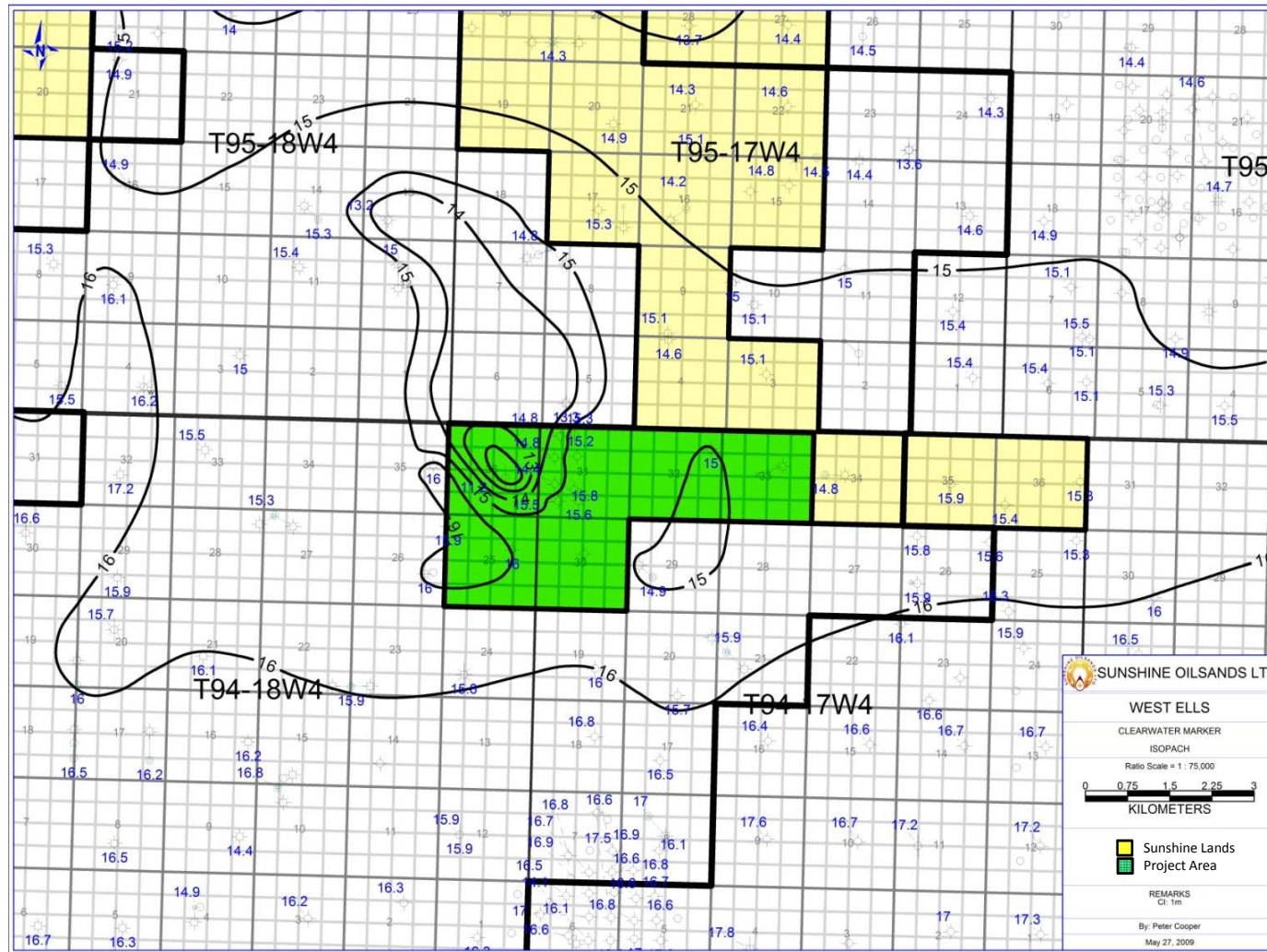


West Ells SAGD Project

TITLE: Steam Chamber Development 400 Kpaa

Drawn By:
TW
Date:
Nov 2009

Figure:
2.3-10



West Ells SAGD Project -

TITLE:

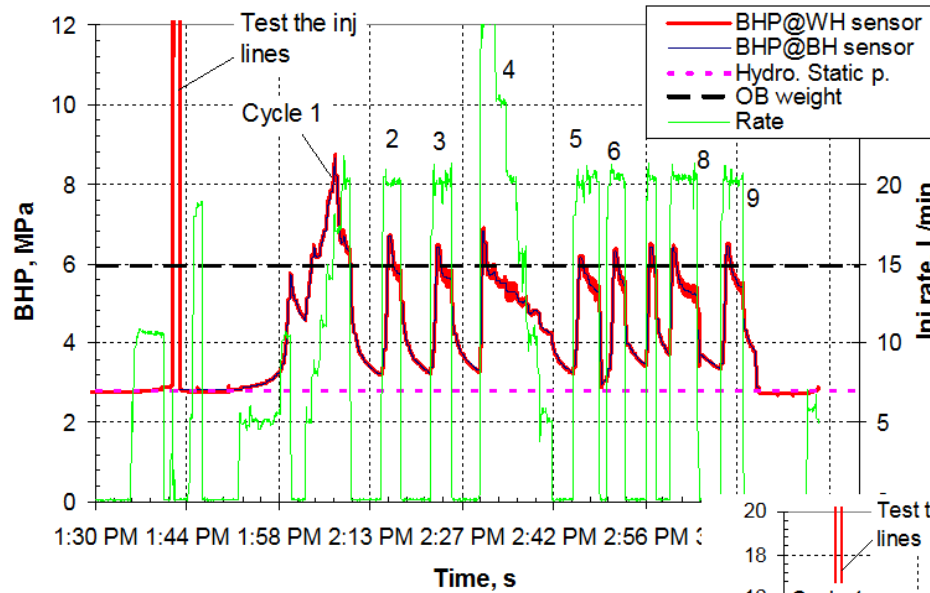
Cap Rock Isopach Map

DRAWN: SL
 CHECKED: KY
 DATE: Nov 6/08
 PROJECT: 08-015

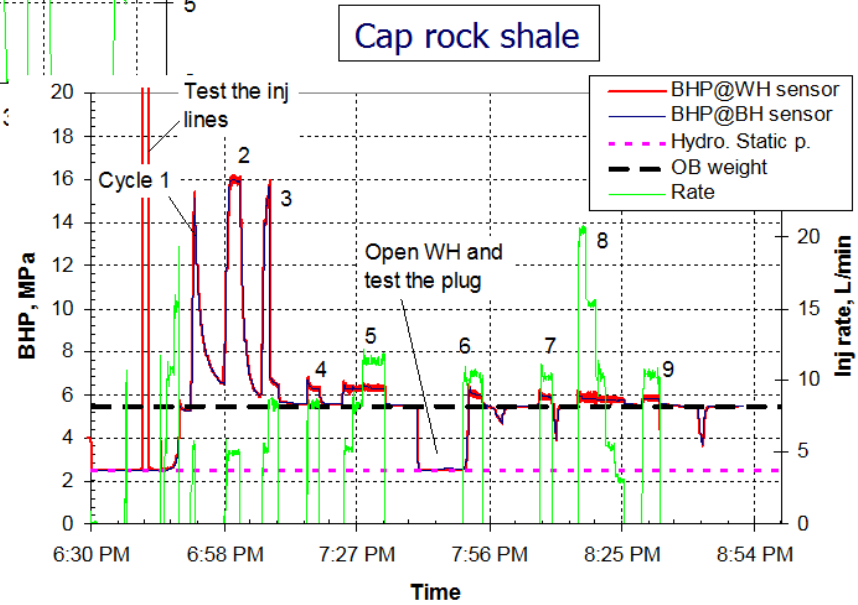
FIGURE:

2.3-11

REF: Sunshine Oil Sands Ltd, 2008.



Oil sands

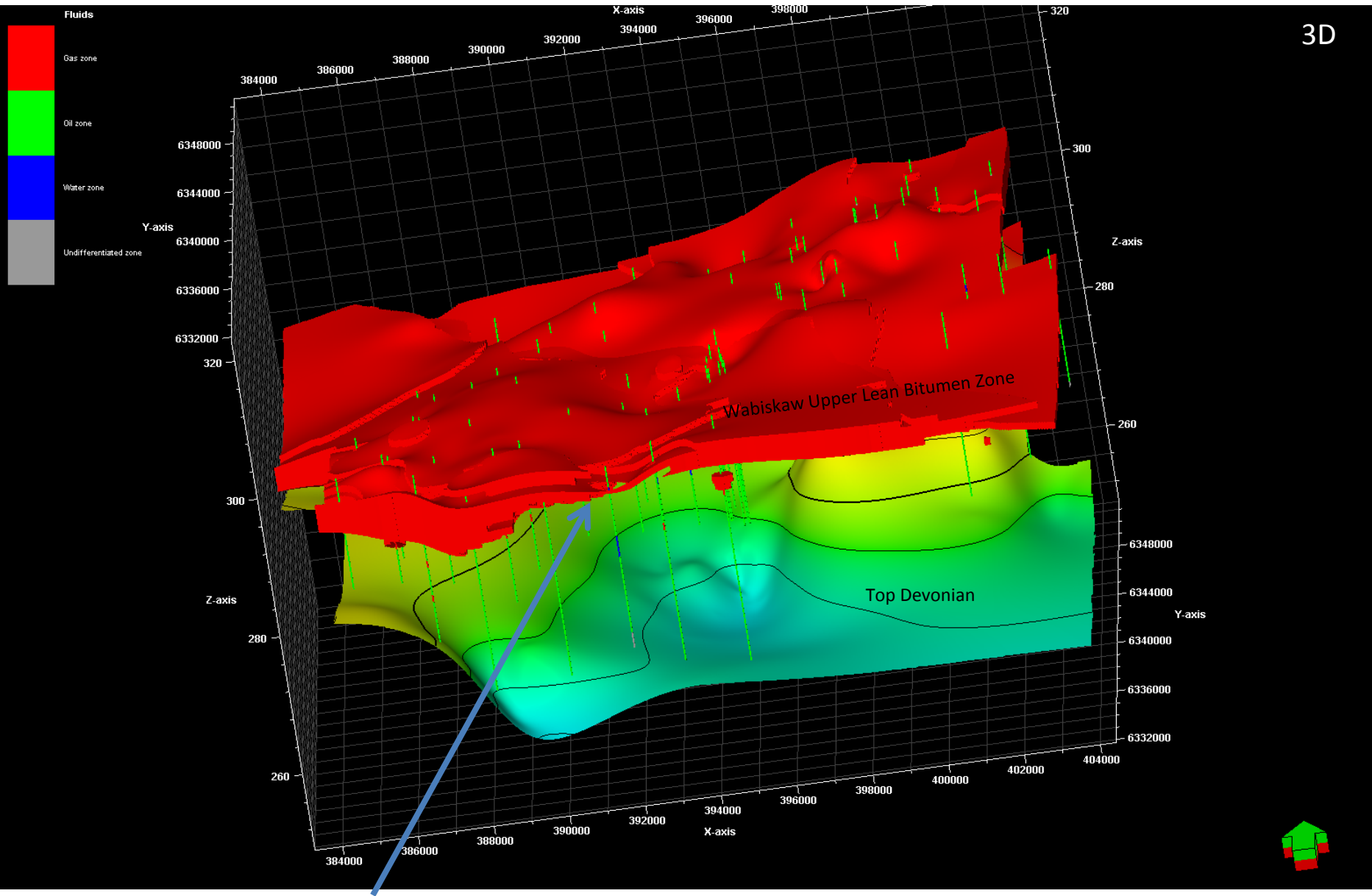


Cap rock shale




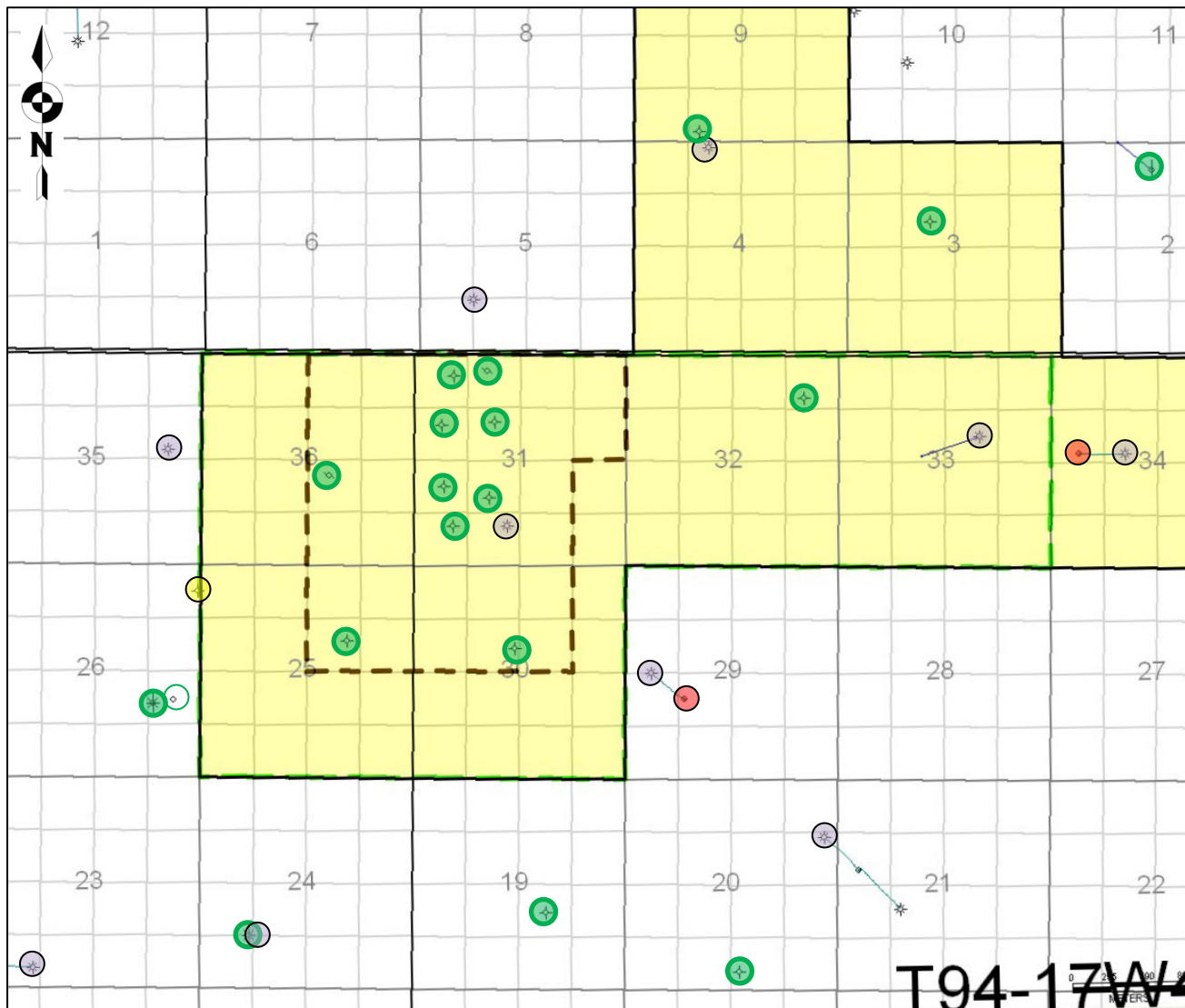
West Eils SAGD Project

TITLE: West Eils Injectivity Tests for 14-31-94-17W4	DRAWN: SL	FIGURE: 2.3-12
	CHECKED: KY	
	DATE: Nov 6/08	
	PROJECT: 08-015	



Continuous Lean Bitumen Zone
(4 Townships Shown)

	West Ells SAGD Project	
	TITLE: Lean Bitumen Zone – PETREL Model	
	Drawn By: TW	Figure: 2.4-1
	Date: Nov 2009	



- Abandoned with Thermal Cement
- No Data
- Shut In
- No Thermal Cement
- Location

Legend

- Project Development Area
- Project Area



West Ells SAGD Project

TITLE:

Surrounding Well Completions

Drawn By:

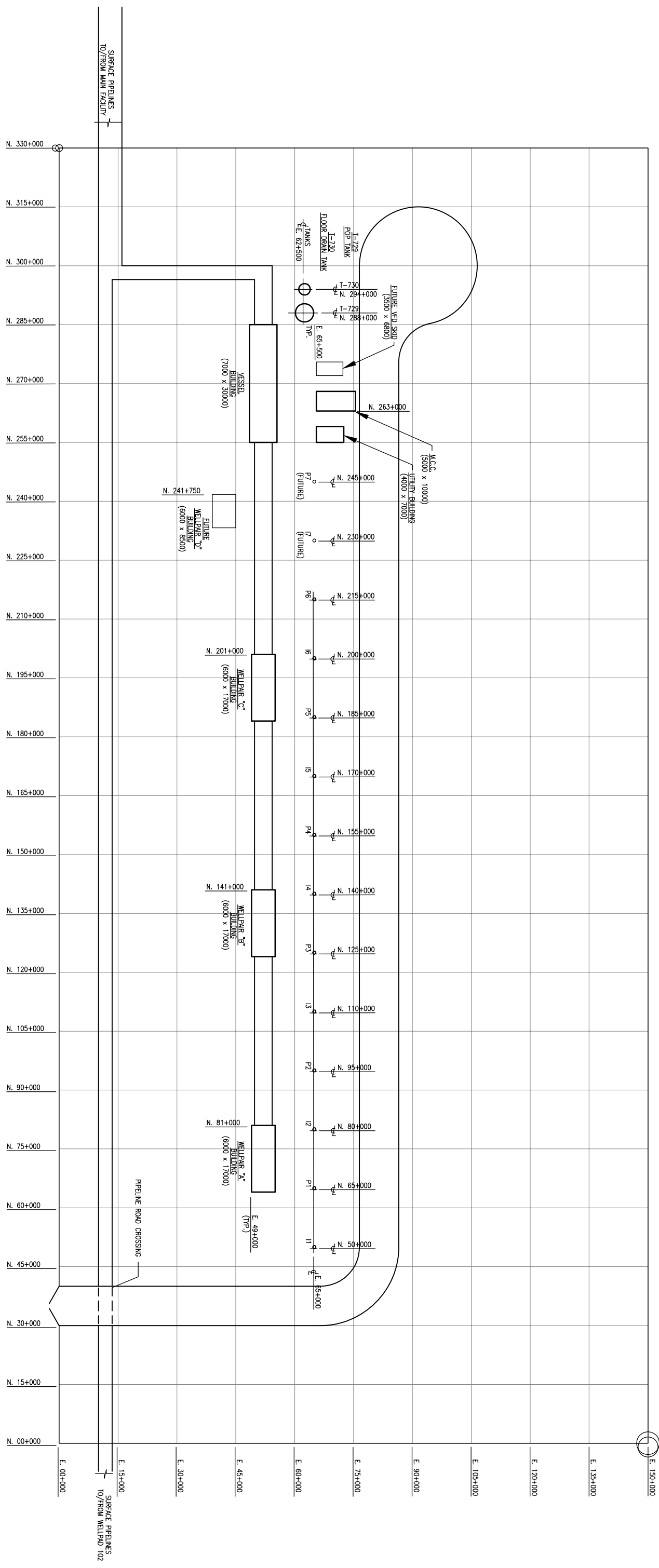
TW

Date:

Nov 2009

Figure:

2.4.2



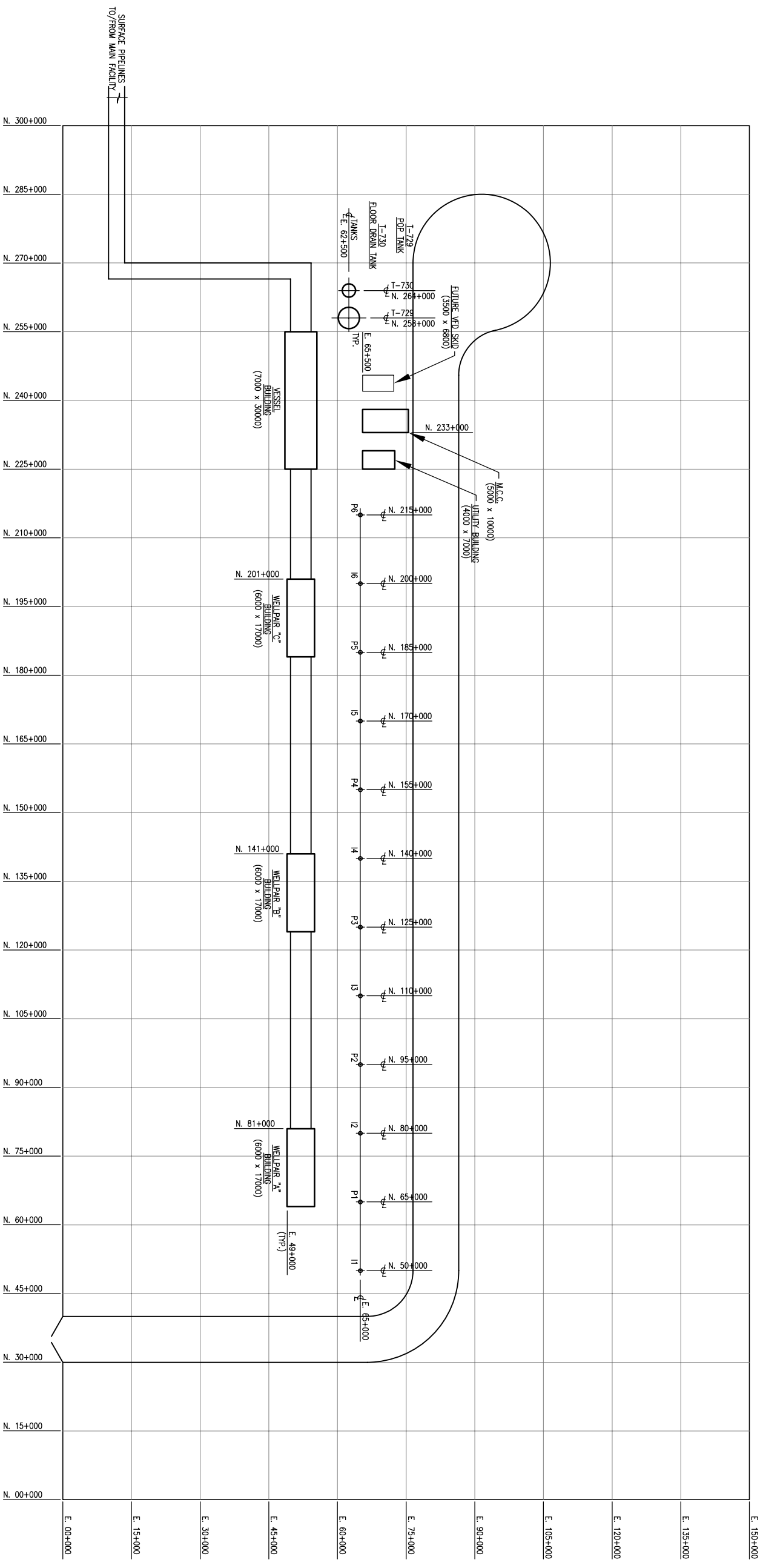
West Ellis SAGD Project

North Pad Plot Plan

TITLE:	FILE: Figure 2.5-1 North Pad Plot Plan
DRAWN: AD	FIGURE:
CHECKED: KY	
DATE: Nov 28/08	
PROJECT: 08-105	

2.5-1

Source: Amec BDR Pilot West Ellis SAGD Facility Well Pad 101 (North Pad) Plot Plan Drawing 84585-A-00-02.



West Eils SAGD Project

South Pad Plot Plan

TITLE:

FILE: Figure 2.5.2 South Pad Plot Plan

DRAWN: AD FIGURE:

CHECKED: KY

DATE: Nov 28/08

PROJECT: 08-105

SYMBOL LEGEND

	GATE VALVE (GA)		MOTOR OPERATED ACTUATOR		FLOW NOZZLE		FLEXIBLE HOSE	F.O.	FAIL OPEN		SONIC FLOW ELEMENT
	BALL VALVE (BA)		3-WAY VALVE		ORIFICE PLATE		EXPANSION JOINT	F.C.	FAIL CLOSED		TURBINE FLOW ELEMENT
	PLUG VALVE (PL)		MIXING VALVE		RESTRICTING ORIFICE		PROCESS PIPING	C.S.O.(C)	CAR SEAL OPEN (CLOSED)		POSITIVE DISPLACEMENT ELEMENT
	NEEDLE VALVE (NE)		3-WAY SOLENOID VALVE VENTING WITH POWER FAILURE		SPECTACLE BLIND, OPEN CLOSED		PNEUMATIC SIGNAL	E.S.D.	EMERGENCY SHUTDOWN		VORTEX ELEMENT
	GLOBE VALVE (GL)		ANGLE CHOKE		CHANGE IN PIPE SIZE		CAPILLARY TUBING	N.C.	NORMALLY CLOSED		WEDGE FLOW ELEMENT
	CHECK VALVE (CH)		INLINE CHOKE		INLINE STRAINER		ELECTRICAL SIGNAL	N.O.	NORMALLY OPEN		ORIFICE METER RUN
	BUTTERFLY VALVE (BU)		DIAPHRAGM		GAUGE HATCH		HYDRAULIC SIGNAL	S.R.	SPRING RETURN		ROTAMETER
	SOCKET WELD VALVE		Y-STRAINER		THIEF HATCH		MECHANICAL LINK		SPEC BREAK		SUPPLIED BY OTHERS
	SCREWED VALVE		BASKET STRAINER		EMERGENCY HATCH		INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK) MODBUS LINK OR PROFIBUS				TIE IN NUMBER
	FLANGED VALVE		PRESSURE SAFETY VALVE		INSULATION (H-HOT, C-COLD)		INSTRUMENT OR DEVICE				TIE IN LOCATIONS
	CONTROL VALVE WITH DIAPHRAGM ACTUATOR		PRESSURE VACUUM RELIEF VALVE		INSULATION & ELECTRIC HEAT TRACE		PLANT CONTROLLER (PLC, RTU, DCS)				CORIOLIS FLOW ELEMENT
	SPRING OPPOSED SINGLE ACTING PISTON ACTUATOR		RUPTURE DISC (PRESSURE)		INSULATION & GLYCOL HEAT TRACE		UNIT CONTROLLER (STANDALONE AT VENDOR PLC)				MAGNETIC FLOW ELEMENT
	DOUBLE ACTING PISTON ACTUATOR		RUPTURE DISC (VACUUM)		INSULATION & STEAM HEAT TRACE						
	PRESSURE REGULATOR										

INSTRUMENT AIR (A) OR GAS (G) HOOK-UP TYPICAL AT LOCATIONS MARKED WITH:

INSTRUMENT BALLOON LETTERING LEGEND

NOTE: WHEN AN INSTRUMENT IS CLASSIFIED WITH ONLY TWO LETTERS, USE THE FIRST AND THIRD LETTER MEANINGS. WHEN AN INSTRUMENT IS CLASSIFIED WITH ONLY ONE LETTER, USE THE SECOND LETTER MEANINGS.

1ST. LETTER	MEANING(S)	2ND. LETTER	MEANING(S)	3RD. LETTER	MEANING(S)
A	ANALYZE, ACTUATE	A	ALARM	A	ALARM
B	BURNER	B	-	B	-
BD	BLOWDOWN	BD	-	BD	-
C	COMBUSTIBLE, CONCENTRATION	C	CONTROL	C	CONTROLLER, CLOSED
D	DEW, MOISTURE	D	DETECT	D	DETECT, DEVICE
E	VOLTAGE, EMERGENCY	E	ELEMENT	E	ELEMENT
F	FLOW	F	RATIO, FRACTIONAL	F	FORWARD
FF	FLAME FAILURE	FF	-	FF	-
G	GAS	G	-	G	GLASS, GAUGE
H	HAND	H	-	H	HATCH, HIGH
I	ELECTRICAL CURRENT	I	INDICATOR, IGNITOR	I	INDICATOR, IGNITOR
J	POWER	J	-	J	-
K	TIME, TIME SCHEDULE	K	-	K	CONTROL STATION
L	LEVEL	L	-	L	LOW
M	MOTOR	M	MOMENTARY	M	MANAGE(R)
N	USERS CHOICE	N	USERS CHOICE	N	USERS CHOICE
O	USERS CHOICE	O	-	O	ORIFICE, OPEN
P	PRESSURE, VACUUM	P	POINT/TEST CONNECTION	P	-
PD	PRESSURE DIFFERENTIAL	PD	-	PD	-
PV	PRESSURE & VACUUM	PV	-	PV	-
Q	QUANTITY	Q	TOTALIZE, INTEGRATE	Q	-
R	RADIATION, RESTRICT	R	RECORD, REGULATE, RUN, RELIEF	R	RECORD, REVERSE, RUN
S	SPEED, FREQUENCY, SOLENOID, SURGE	S	SAFETY, SCAN, STOP/START, SWITCH	S	SWITCH, SYSTEM, STATUS
SD	SHUTDOWN	SD	SHUTDOWN	SD	SHUTDOWN
T	TEMPERATURE, THIEF	T	-	T	TRANSMITTER
TD	TEMPERATURE DIFFERENTIAL	TD	-	TD	-
U	MULTIVARIABLE, UNIT	U	MULTIFUNCTION	U	MULTIFUNCTION
V	VIBRATION	V	VACUUM	V	VALVE, DAMPNER, LOUVRE
W	WEIGHT, FORCE	W	-	W	WELL
X	UNCLASSIFIED	X	UNCLASSIFIED	X	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	Y	CONVERT, COMPUTE, RELAY	Y	-
Z	POSITION	Z	-	Z	UNCLASSIFIED, FCE (FINAL CONTROL ELEMENT)

VALVE DESIGNATIONS

114 BA- 1 0 1 S X

VALVE SIZE: 114

VALVE TYPE: BA-BALL

RATING: 1-150# ANSI, 3-300# ANSI, 6-600# ANSI, 9-900# ANSI, 15-1500# ANSI, 25-2500# ANSI

TEMPERATURE SERVICE: V - BELOW -45°C, W - -45°C TO -29°C, X - -29°C TO 121°C, Y - 121°C TO 200°C, Z - ABOVE 200°C

SOUR

END CONNECTIONS: 1-RF FLANGED, 2-RTJ FLANGED, 3-THREADED, 4-WELDED (SOCKET), 5-WELDED (BUTT), 6-MxX (GAUGE VALVES), 7-FLAT FACE FLANGED, 8-CLAMP, 9-WELDED (SOCKET) x THREADED

BODY STYLE MODIFIER

BODY STYLE MODIFIER	0	1	2	3	4	5
BALL	R.P. FLOATING	F.P. FLOATING	R.P. TRUNNION	F.P. TRUNNION		
BUTTERFLY	RUBBER LINED NON-LUGGED	RUBBER LINED LUGGED	TFE SEATED NON-LUGGED	TFE SEATED LUGGED	METAL SEATED NON-LUGGED	METAL SEATED LUGGED
CHECK	F.P. SWING	R.P. SWING	WAFFER TYPE SWING	PISTON TYPE	PISTON TYPE WAFFER	
GATE	R.P. WEDGE	FLEX WEDGE	F.P. SLAB	R.P. SLAB	F.P. WEDGE	
GLOBE	STD. BODY	ANGLE BODY	"Y" BODY			
NEEDLE	THREADED BONNET METAL SEAT	THREADED BONNET SOFT SEAT	OS&Y BONNET METAL SEAT	OS&Y BONNET SOFT SEAT	GAUGE VALVE THREADED BONNET METAL SEAT	GAUGE VALVE THREADED BONNET SOFT SEAT
PLUG	REGULAR PATTERN	SHORT PATTERN	JACKET			
BASKET STRAINER						
"Y" STRAINER						

LINE NUMBERING SYSTEM

114 - 150 C PS X - 121

LINE SIZE (mm OD): 114

PRIMARY PRESSURE RATING: 150

LINE MATERIAL CODE: C

PIPING SYSTEM CODE: PS

TEMP. INDEX: X

LINE NUMBER: 121

CLASS: 150, 300, 600, 900, 1500, 2500

RATING: ANSI 150#, ANSI 300#, ANSI 600#, ANSI 900#, ANSI 1500#, ANSI 2500#

LINE MATERIAL CODE: COATED PIPING C, FIBRE GLASS F, STAINLESS STEEL S, POLY P

PIPING SYSTEM CODE: SERVICE, INSTRUMENT AIR, PROCESS PIPING (ANSI B31.3 CODE), SWEET PROCESS HYDROCARBONS, CAUSTIC, PROCESS DRAINS, AND VENT SYSTEMS, SOUR PROCESS HYDROCARBONS, CAUSTIC, SOUR LIQUIDS, HYDROCARBONS, AND WATER, PROCESS DRAINS, AND VENT SYSTEMS

TEMPERATURE INDEX: SERVICE, BELOW -45°C, -45°C TO -29°C, -29°C TO 121°C, 121°C TO 200°C, ABOVE 200°C

STAMPS

NO.	REVISION	PROJ. No.	BY	DATE	CHK.	DATE
3	FUTURE WELLPAR ADDED	84585	KN	2010.03.03		
2	REDUCED TO 7 WELLPARS (WAS 8)	84585	ASA	09.10.20		
1	ISSUED FOR DBM	84585	ASA	08.07.31		
0	ISSUED FOR INFORMATION	84585	ASA	08.05.30		

REFERENCE P. & I.D.'S

84585-PF-00-01	PROCESS FLOWSHEET
84585-PF-00-02	PROCESS FLOWSHEET
84585-PF-00-03	PROCESS FLOWSHEET

GENERAL NOTES:

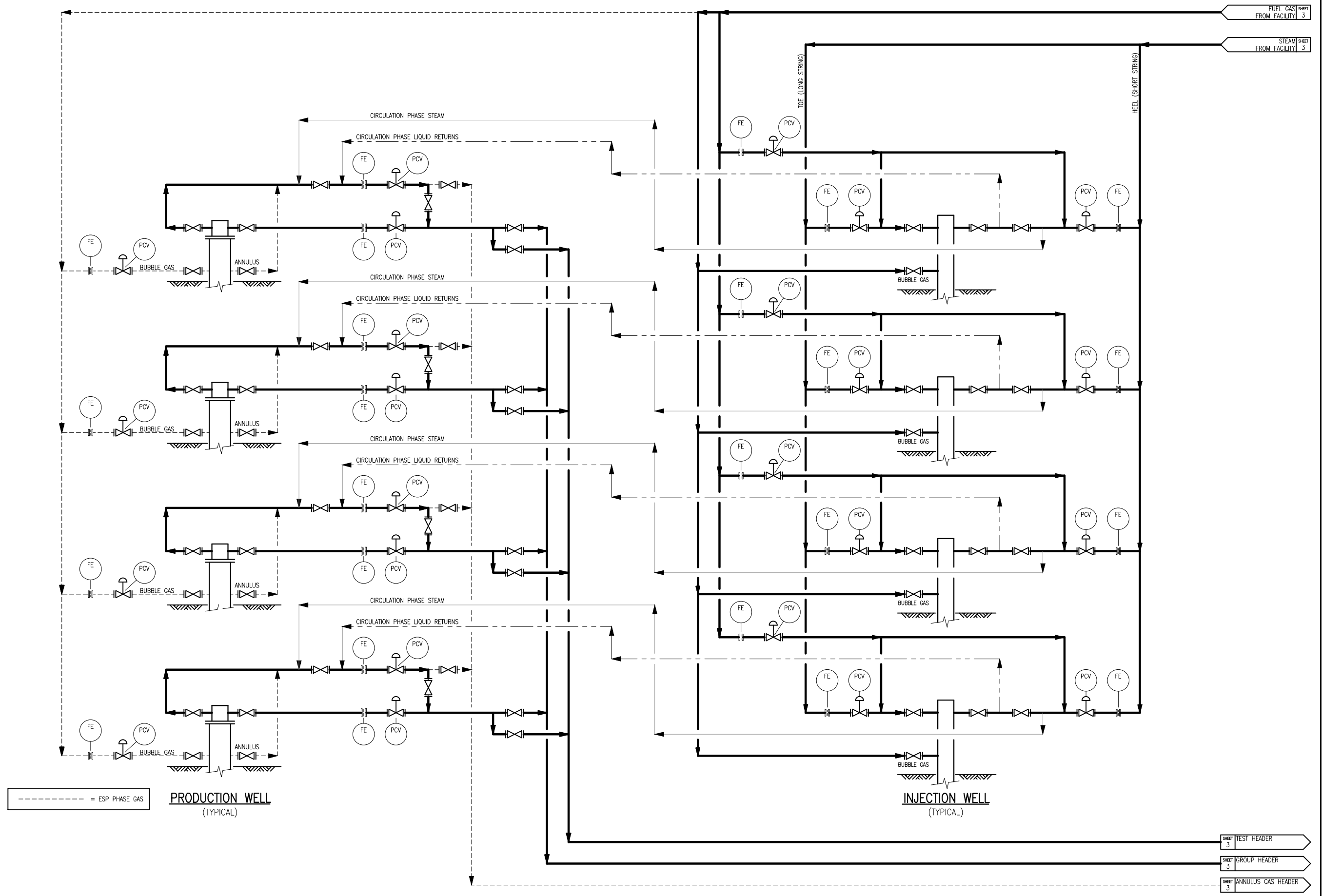
- "FAST CONSTRUCTION DRAWINGS" ARE GENERATED FROM CONSTRUCTION CHANGE INFORMATION FORWARDED TO BOWER DAMBERGER ROLSETH ENGINEERING LTD. BY THE OWNER'S FIELD SUPERVISOR AND/OR HIS CONTRACTORS. ANY CHANGES NOT DOCUMENTED WILL NOT APPEAR ON THE DRAWINGS AND THEREFORE THE DRAWING MAY NOT BE AN ACCURATE REPRESENTATION OF THE CONSTRUCTED FACILITY.
- PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND/OR EXAMINATION IT SHALL BE THE RESPONSIBILITY OF THE OWNER'S REPRESENTATIVE TO VERIFY THE LOCATION AND STATUS OF ANY PIPING, ELECTRICAL, EQUIPMENT OR BUILDINGS.
- ANY REVISIONS MADE TO EXISTING EQUIPMENT, PIPING OR ELECTRICAL, ON A FACILITY NOT COVERED BY BDR ENGINEERING LTD. IS ONLY SHOWN AS A REPRESENTATION OF WHAT EXISTS AND MUST BE VERIFIED BY THE OWNER.

DRN.	BY	DATE
CHK.	CT	08.05.20
APP'D.		
L.S.D.	TBA	



WEST ELLS PILOT SAGD WELLPAD 101
PROCESS FLOW

SHEET NUMBER	FIGURE	REV
1 OF 4	2.5-3	3



----- = ESP PHASE GAS

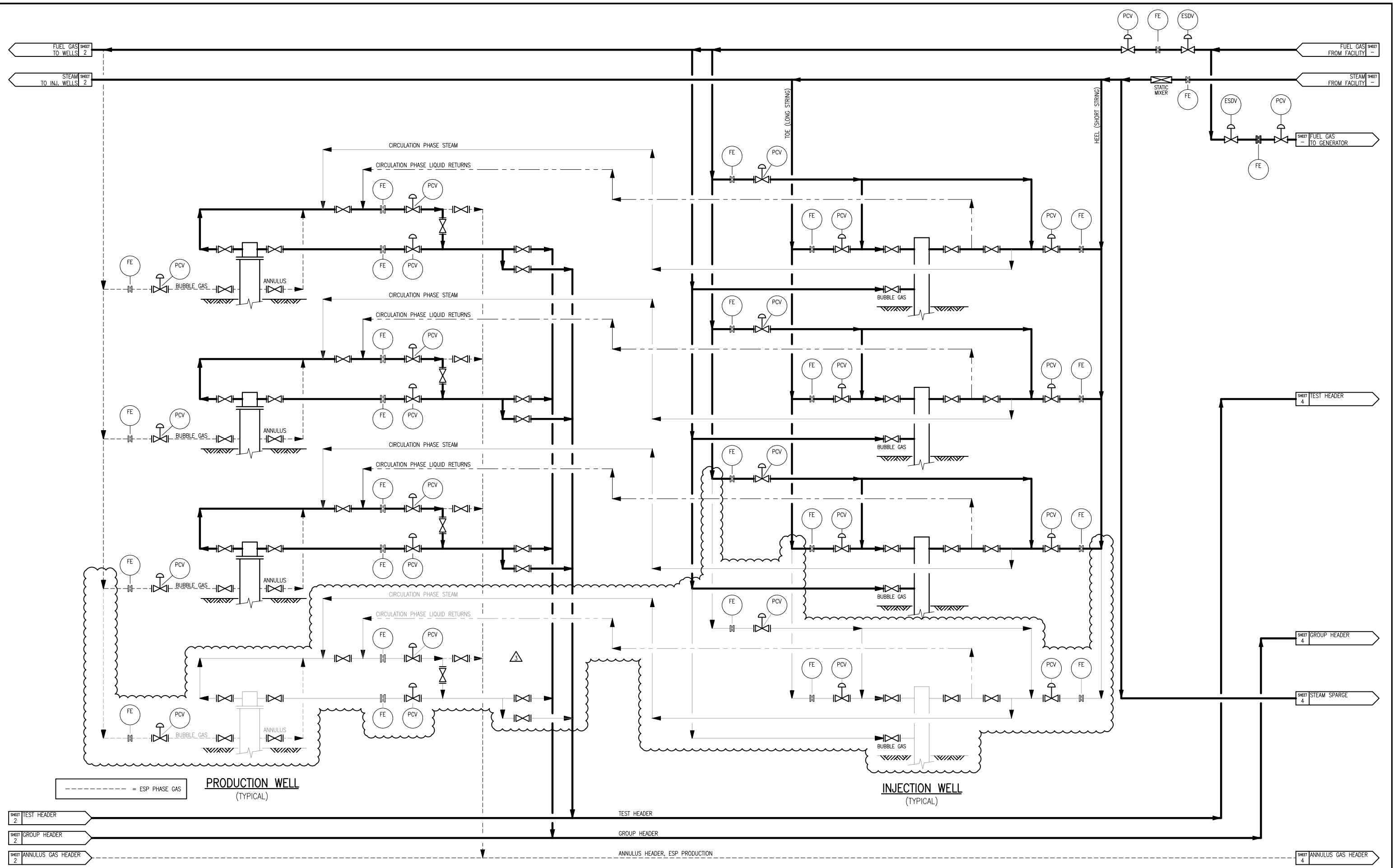
PRODUCTION WELL
(TYPICAL)

INJECTION WELL
(TYPICAL)

FUEL GAS FROM FACILITY 3 SHEET 3
STEAM FROM FACILITY 3 SHEET 3

SHEET TEST HEADER 3
SHEET GROUP HEADER 3
SHEET ANNULUS GAS HEADER 3

SHEET NUMBER	FIGURE	REV
2 OF 4	2.5-3	3



SHEET NUMBER	FIGURE	REV
3 OF 4	2.5-3	3

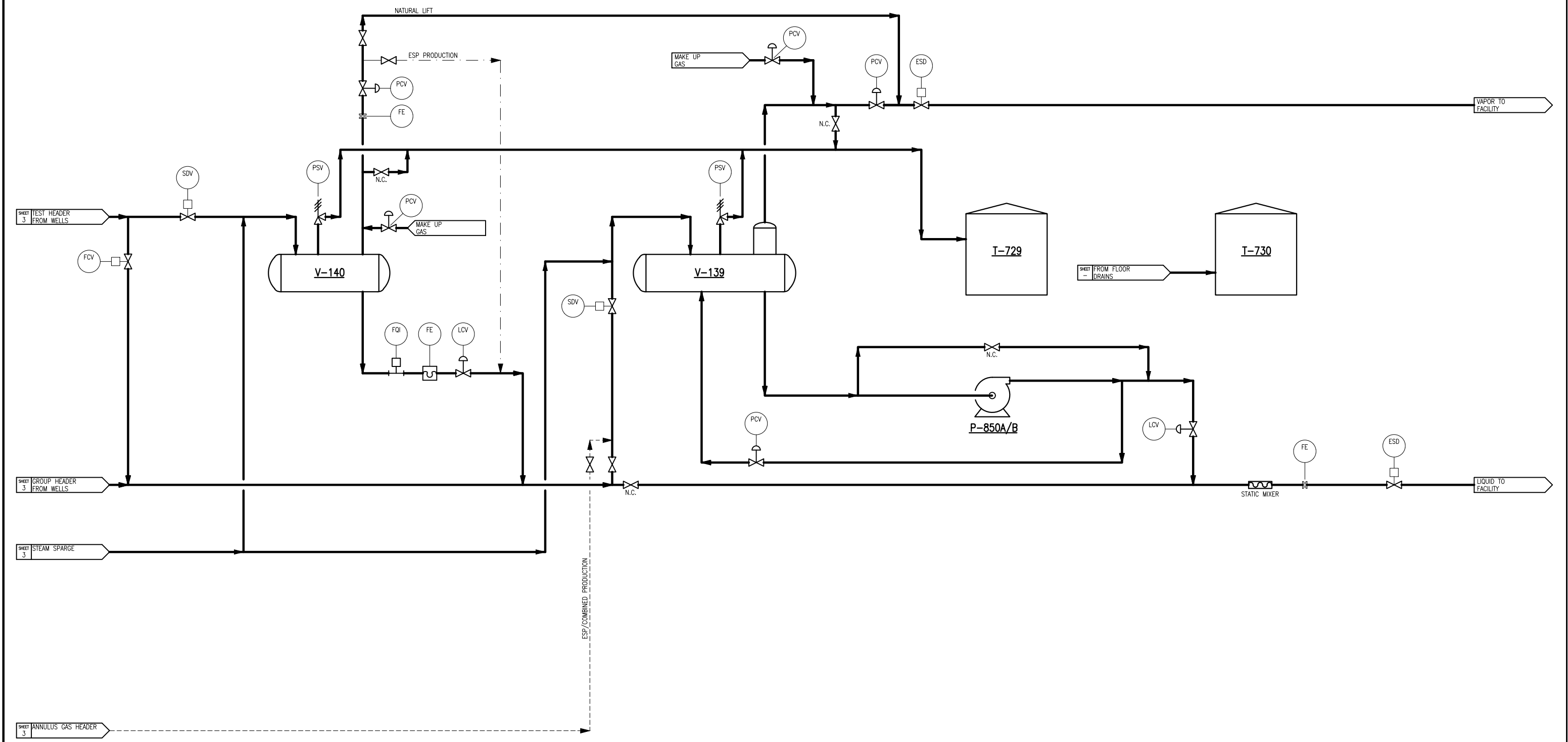
V-140
TEST SEPARATOR

V-139
GROUP SEPARATOR

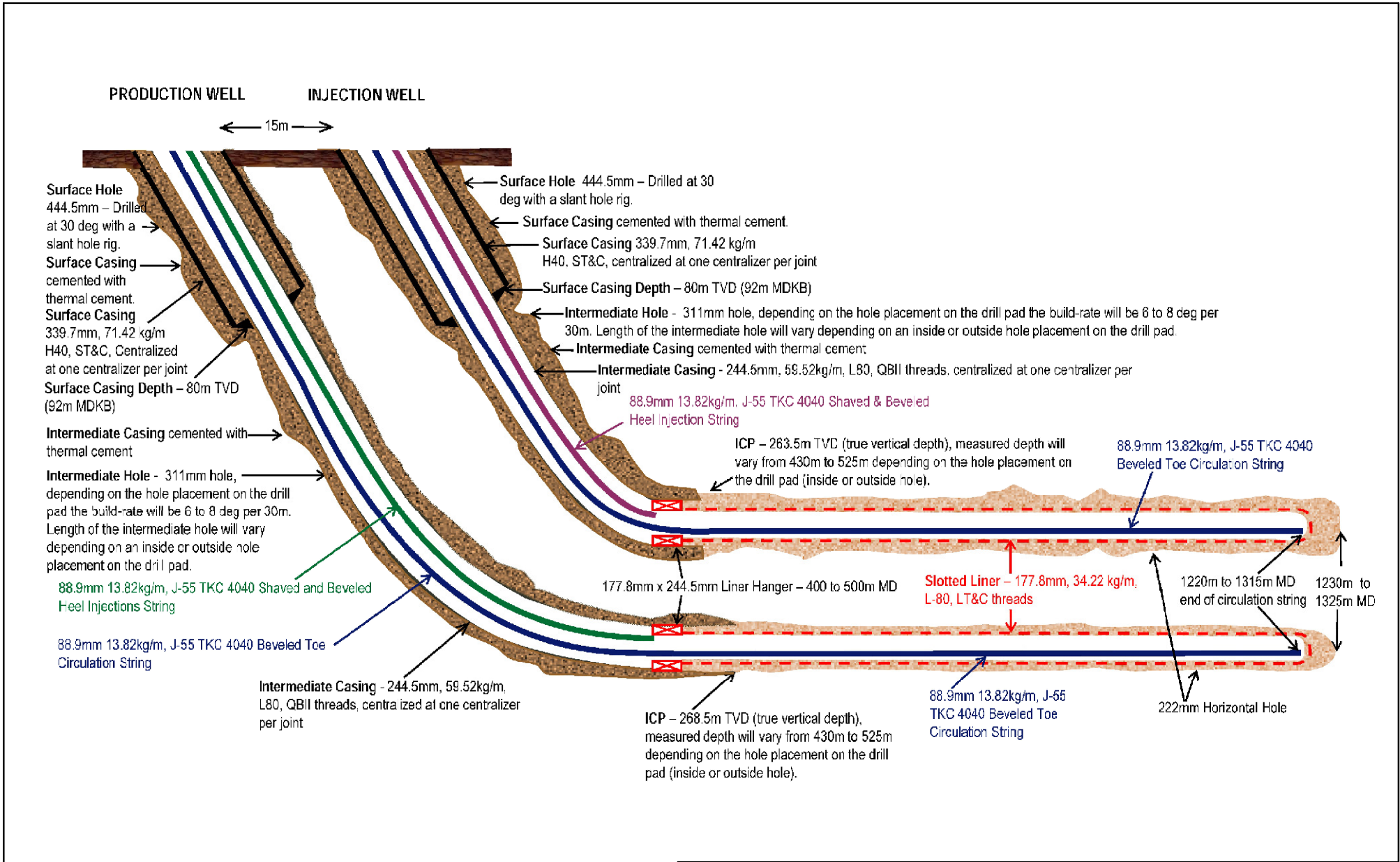
P-850A/B
GROUP EMULSION PUMPS


T-729
POP TANK

T-730
FLOOR DRAIN TANK

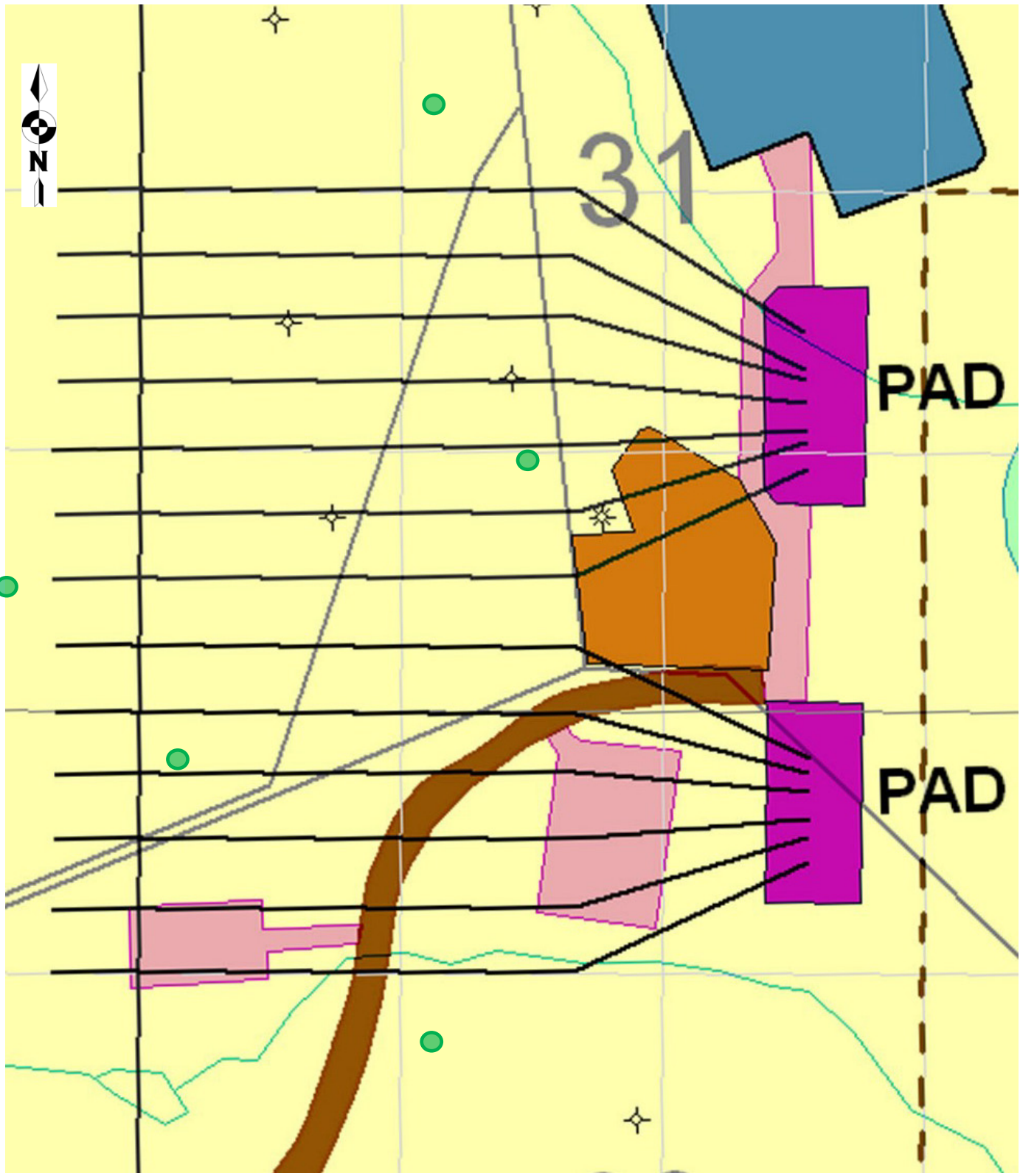


SHEET NUMBER	FIGURE	REV
4 OF 4	2.5-3	3



	West Eils SAGD Project	
	TITLE:	
	Schematic of Injection and Production Well	
	DRAWN: SL CHECKED: KY DATE: Nov 27/08 PROJECT: 08-015	FIGURE: 2.5-4

REF: Sunshine Oil Sands Ltd, 2008.



● Observation Well
 — SAGD Well Pair



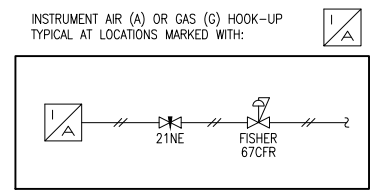
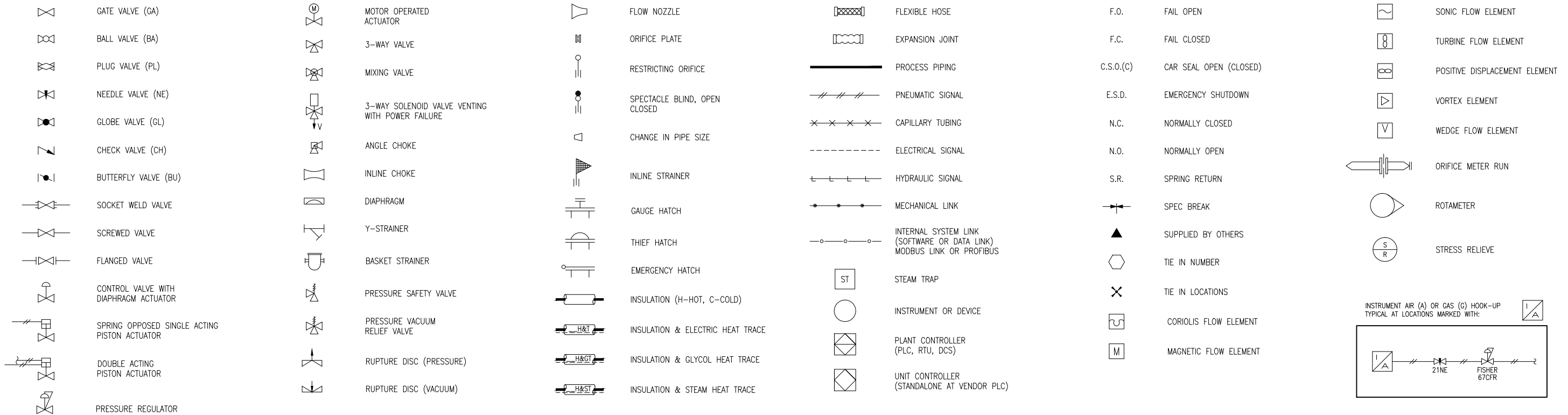
West Ells SAGD Project

TITLE:

Observation Wells

**Figure:
 2.5-5**

SYMBOL LEGEND

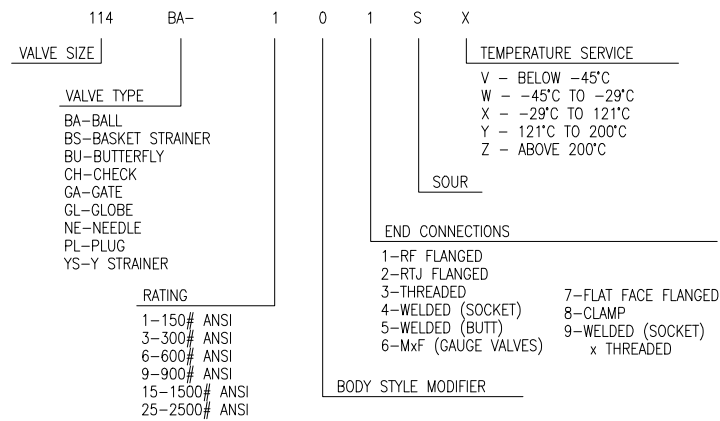


INSTRUMENT BALLOON LETTERING LEGEND

NOTE: WHEN AN INSTRUMENT IS CLASSIFIED WITH ONLY TWO LETTERS, USE THE FIRST AND THIRD LETTER MEANINGS.
WHEN AN INSTRUMENT IS CLASSIFIED WITH ONLY ONE LETTER, USE THE SECOND LETTER MEANINGS.

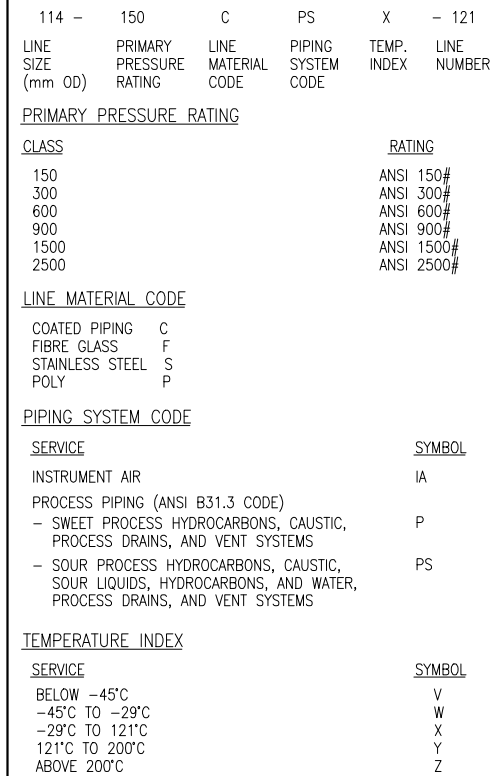
1ST. LETTER	MEANING(S)	2ND. LETTER	MEANING(S)	3RD. LETTER	MEANING(S)
A	ANALYZE, ACTUATE	A	ALARM	A	ALARM
B	BURNER	B	-	B	-
BD	BLOWDOWN	BD	-	BD	-
C	COMBUSTIBLE, CONCENTRATION	C	CONTROL	C	CONTROLLER, CLOSED
D	DEW, MOISTURE	D	DETECT	D	DETECT, DEVICE
E	VOLTAGE, EMERGENCY	E	ELEMENT	E	ELEMENT
F	FLOW	F	RATIO, FRACTIONAL	F	FORWARD
FF	FLAME FAILURE	FF	-	FF	-
G	GAS	G	-	G	GLASS, GAUGE
H	HAND	H	-	H	HATCH, HIGH
I	ELECTRICAL CURRENT	I	INDICATOR, IGNITOR	I	INDICATOR, IGNITOR
J	POWER	J	-	J	-
K	TIME, TIME SCHEDULE	K	-	K	CONTROL STATION
L	LEVEL	L	-	L	LOW
M	MOTOR	M	MOMENTARY	M	MANAGE(R)
N	USERS CHOICE	N	USERS CHOICE	N	USERS CHOICE
O	USERS CHOICE	O	-	O	ORIFICE, OPEN
P	PRESSURE, VACUUM	P	POINT/TEST CONNECTION	P	-
PD	PRESSURE DIFFERENTIAL	PD	-	PD	-
PV	PRESSURE & VACUUM	PV	-	PV	-
Q	QUANTITY	Q	TOTALIZE, INTEGRATE	Q	-
R	RADIATION, RESTRICT	R	RECORD, REGULATE, RUN, RELIEF	R	RECORD, REVERSE, RUN
S	SPEED, FREQUENCY, SOLENOID, SURGE	S	SAFETY, SCAN, STOP/START, SWITCH	S	SWITCH, SYSTEM, STATUS
SD	SHUTDOWN	SD	SHUTDOWN	SD	SHUTDOWN
T	TEMPERATURE, THIEF	T	-	T	TRANSMITTER
TD	TEMPERATURE DIFFERENTIAL	TD	-	TD	-
U	MULTIVARIABLE, UNIT	U	MULTIFUNCTION	U	MULTIFUNCTION
V	VIBRATION	V	VACUUM	V	VALVE, DAMPNER, LOUVRE
W	WEIGHT, FORCE	W	-	W	WELL
X	UNCLASSIFIED	X	UNCLASSIFIED	X	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	Y	CONVERT, COMPUTE, RELAY	Y	-
Z	POSITION	Z	-	Z	UNCLASSIFIED, FCE (FINAL CONTROL ELEMENT)

VALVE DESIGNATIONS



	BODY STYLE MODIFIER					
	0	1	2	3	4	5
BALL	R.P. FLOATING	F.P. FLOATING	R.P. TRUNNION	F.P. TRUNNION		
BUTTERFLY	RUBBER LINED NON-LUGGED	RUBBER LINED LUGGED	TFE SEATED NON-LUGGED	TFE SEATED LUGGED	METAL SEATED NON-LUGGED	METAL SEATED LUGGED
CHECK	F.P. SWING	R.P. SWING	WAFER TYPE SWING	PISTON TYPE	PISTON TYPE WAFER	
GATE	R.P. WEDGE	FLEX WEDGE	F.P. SLAB	R.P. SLAB	F.P. WEDGE	
GLOBE	STD. BODY	ANGLE BODY	"Y" BODY			
NEEDLE	THREADED BONNET METAL SEAT	THREADED BONNET SOFT SEAT	OS&Y BONNET METAL SEAT	OS&Y BONNET SOFT SEAT	GAUGE VALVE THREADED BONNET METAL SEAT	GAUGE VALVE THREADED BONNET SOFT SEAT
PLUG	REGULAR PATTERN	SHORT PATTERN	JACKET			
BASKET STRAINER						
"Y" STRAINER						

LINE NUMBERING SYSTEM



STAMPS

SERVICE	SYMBOL
INSTRUMENT AIR	IA
PROCESS PIPING (ANSI B31.3 CODE)	
- SWEET PROCESS HYDROCARBONS, CAUSTIC, PROCESS DRAINS, AND VENT SYSTEMS	P
- SOUR PROCESS HYDROCARBONS, CAUSTIC, SOUR LIQUIDS, HYDROCARBONS, AND WATER, PROCESS DRAINS, AND VENT SYSTEMS	PS

TEMPERATURE INDEX	SYMBOL
BELOW -45°C	V
-45°C TO -29°C	W
-29°C TO 121°C	X
121°C TO 200°C	Y
ABOVE 200°C	Z

REFERENCE P. & I.D.'S

84585-PF-00-01	PROCESS FLOWSHEET
84585-PF-00-02	PROCESS FLOWSHEET
84585-PF-00-04	PROCESS FLOWSHEET

GENERAL NOTES:

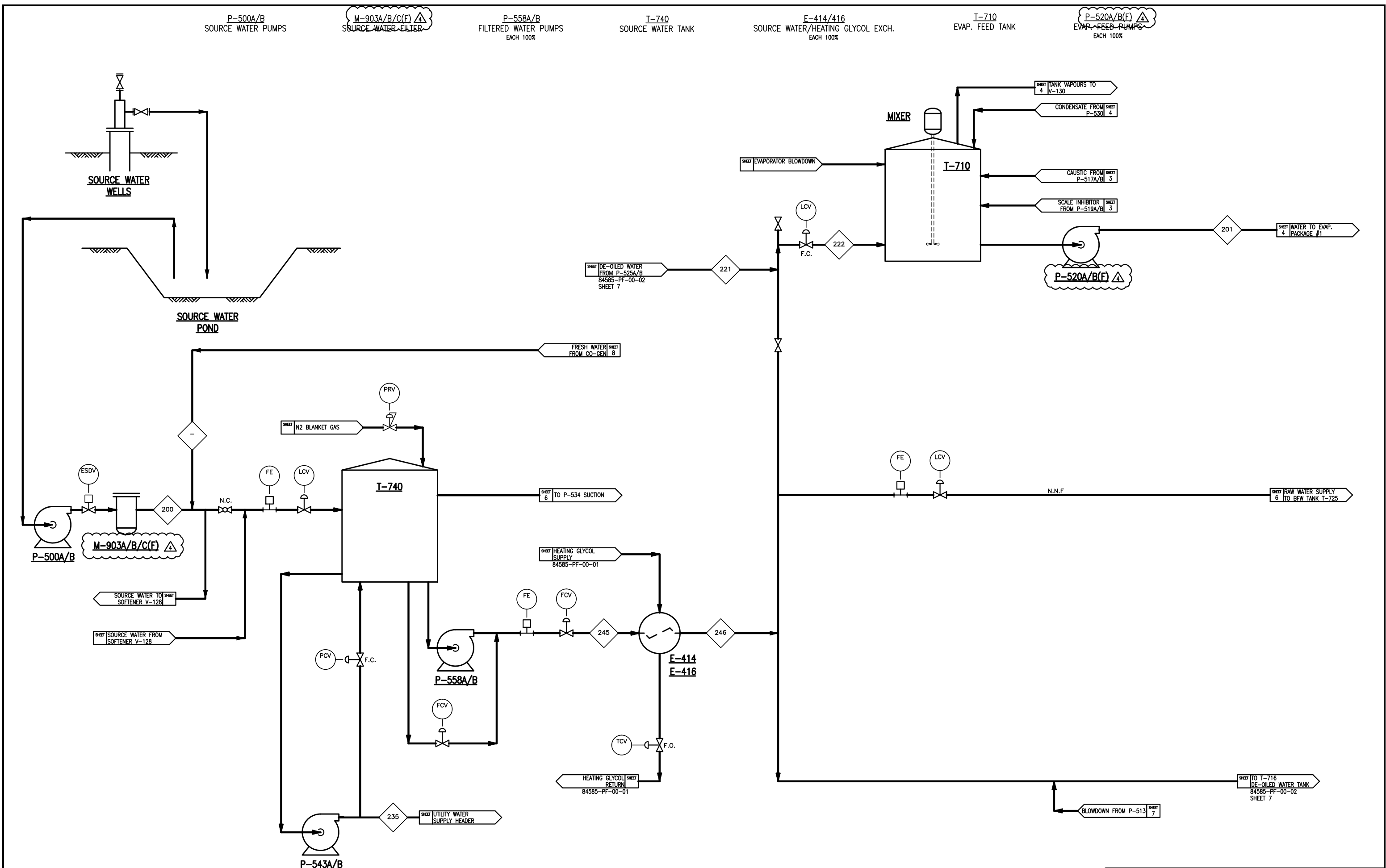
- "BEST CONSTRUCTION DRAWINGS" ARE GENERATED FROM CONSTRUCTION CHANGE INFORMATION FORWARDED TO BOWER DAMBERGER ROLSETH ENGINEERING LTD. BY THE OWNER'S FIELD SUPERVISOR AND/OR HIS CONTRACTORS. ANY CHANGES NOT DOCUMENTED WILL NOT APPEAR ON THE DRAWINGS AND THEREFORE THE DRAWING MAY NOT BE AN ACCURATE REPRESENTATION OF THE CONSTRUCTED FACILITY.
- PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AND OR EXAMINATION IT SHALL BE THE RESPONSIBILITY OF THE OWNER'S REPRESENTATIVE TO VERIFY THE LOCATION AND STATUS OF ANY PIPING, ELECTRICAL, EQUIPMENT OR BUILDINGS.
- ANY REVISIONS MADE TO EXISTING EQUIPMENT, PIPING OR ELECTRICAL, ON A FACILITY NOT COVERED BY BOWER DAMBERGER ROLSETH ENGINEERING LTD. SHALL BE SHOWN AS A REPRESENTATION OF WHAT EXISTS AND MUST BE VERIFIED BY THE OWNER.

BY	DATE
DRN.	CT 08.05.20
CHK.	
APP'D.	
L.S.D.	TBA



WEST ELLS PILOT SAGD FACILITY
PROCESS FLOW (WATER & STEAM)

NO.	REVISION	PROJ. No.	BY	DATE	CHK.	DATE
4	FUTURE EQUIPMENT ADDED	84585	KN	2010.03.03		
3	REMOVED FLUE GAS RE-INJECTION FROM H-802	84585	ASA	09.10.15		
2	ADDED FLUE GAS RE-INJECTION SYSTEM, ISSUED FOR REVISED DBM	84585	ASA	09.06.19		
1	ISSUED FOR DBM	84585	ASA	08.07.31		
0	ISSUED FOR INFORMATION	84585	ASA	08.05.30		



P-500A/B
SOURCE WATER PUMPS

M-903A/B/C(F)
SOURCE WATER FILTER

P-558A/B
FILTERED WATER PUMPS
EACH 100%

T-740
SOURCE WATER TANK

E-414/416
SOURCE WATER/HEATING GLYCOL EXCH.
EACH 100%

T-710
EVAP. FEED TANK

P-520A/B(F)
EVAP. FEED PUMPS
EACH 100%

SHEET NUMBER	FIGURE	REV
2 OF 9	2.6-1	4

H-807
UTILITY STEAM BOILER

T-712
CAUSTIC TANK

P-516A/B
CAUSTIC FEED PUMPS

P-517A/B
CAUSTIC PUMPS


V-133
CAUSTIC WASH TANK

P-599A/B
CAUSTIC WASH PUMPS

T-711
CLEANING TANK

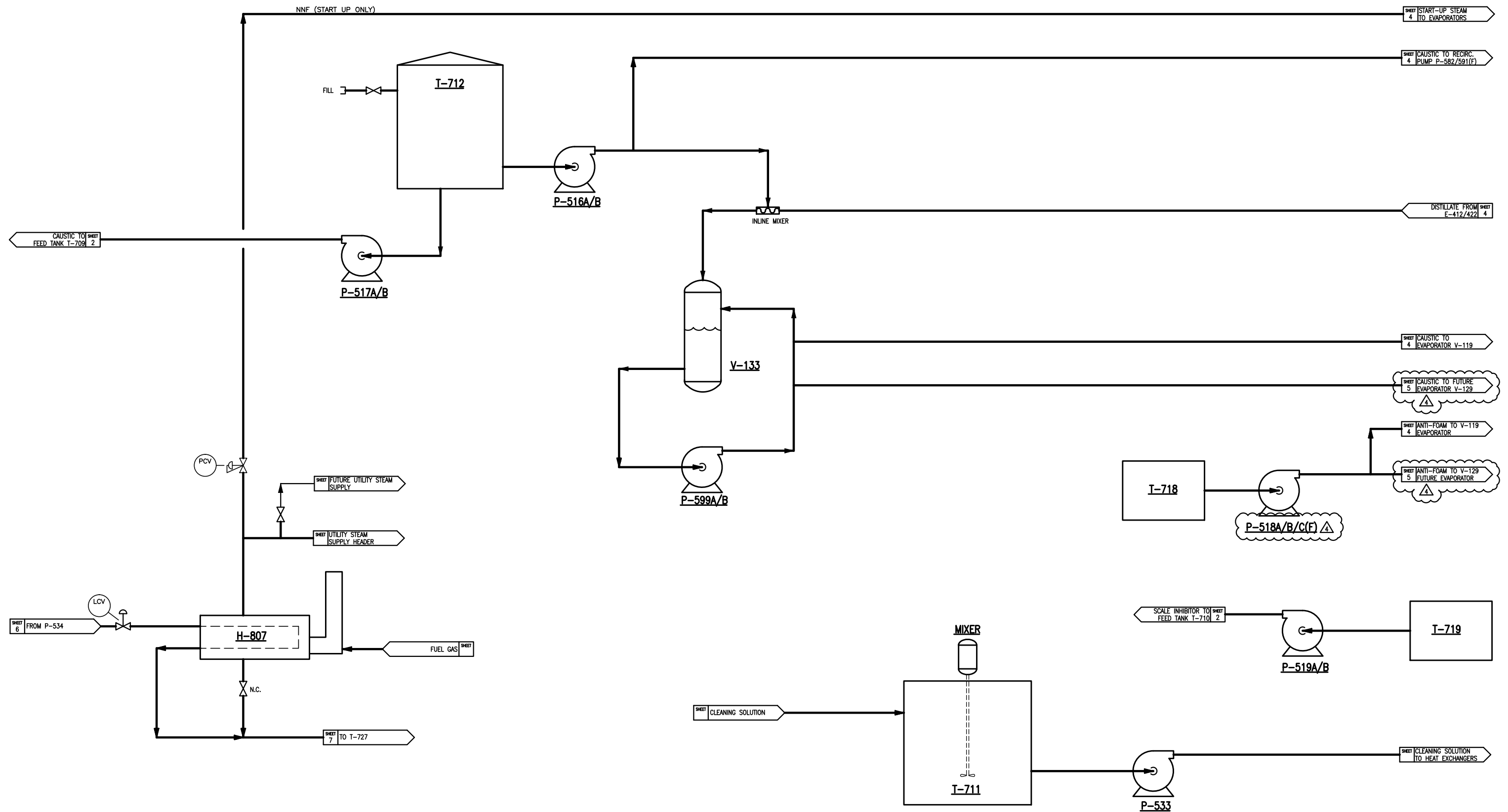
P-533
CLEANING PUMP

T-718
ANTI-FOAM TOTE

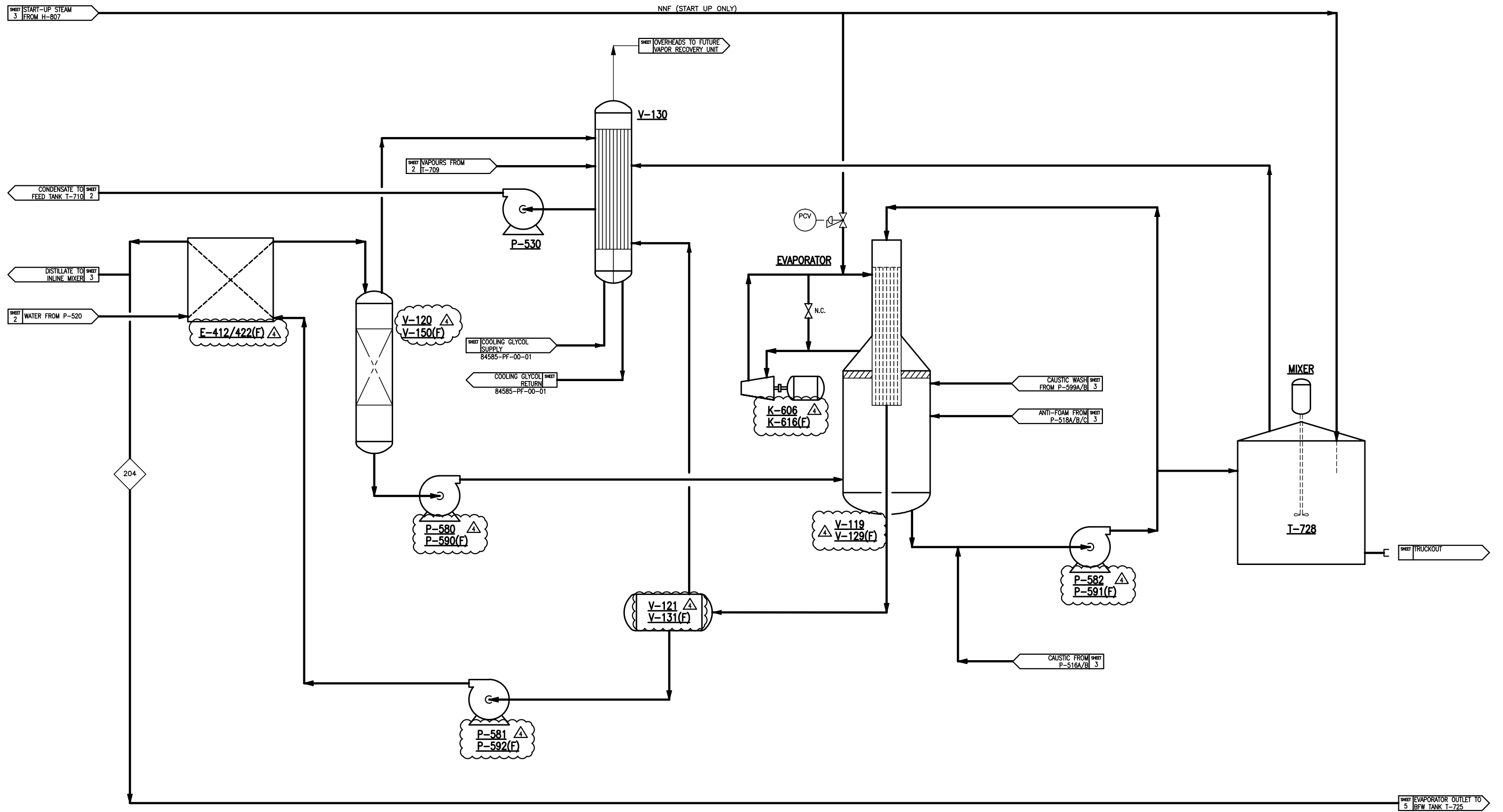
P-518A/B/C(F) 
ANTI-FOAM PUMPS

T-719
SCALE INHIBITOR TOTE

P-519A/B
SCALE INHIBITOR PUMPS



SHEET NUMBER	FIGURE	REV
3 OF 9	2.6-1	4

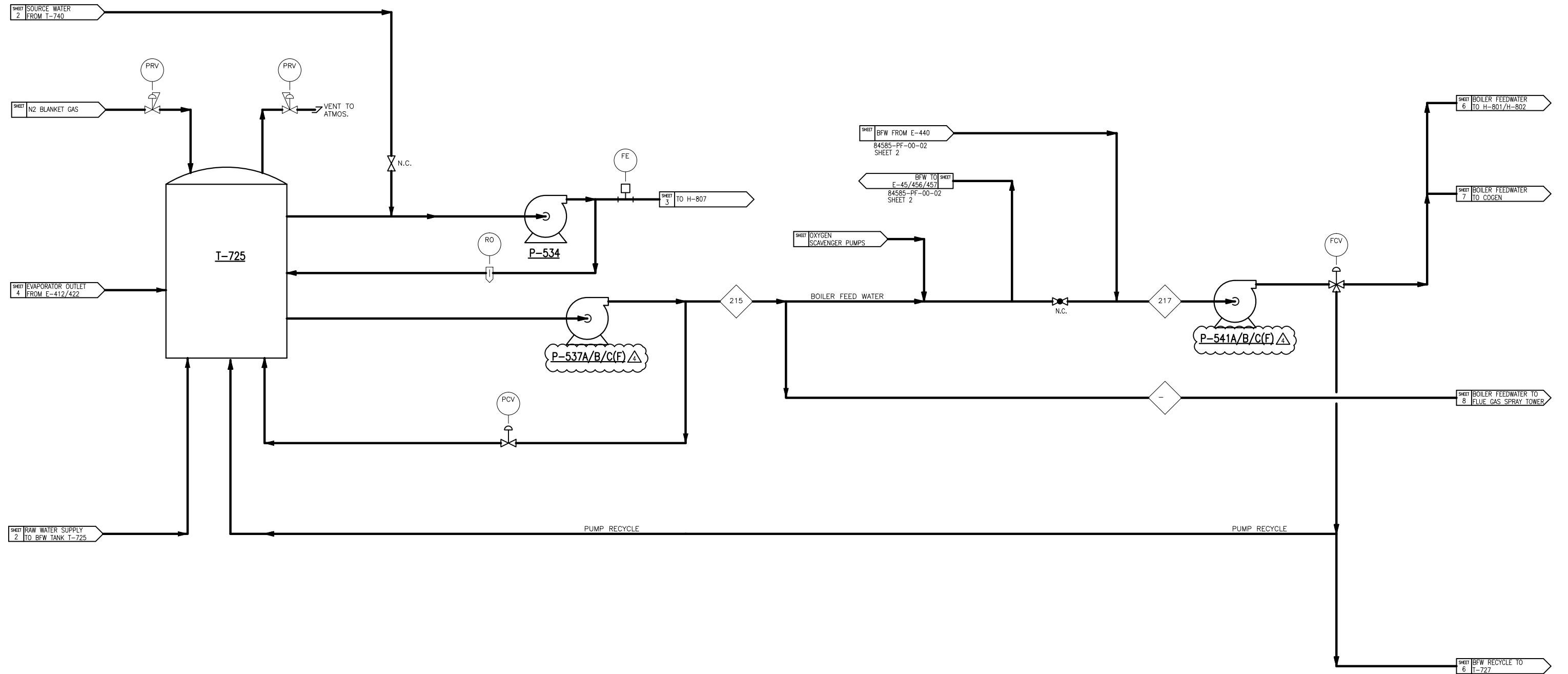


T-725
BOILER FEEDWATER TANK

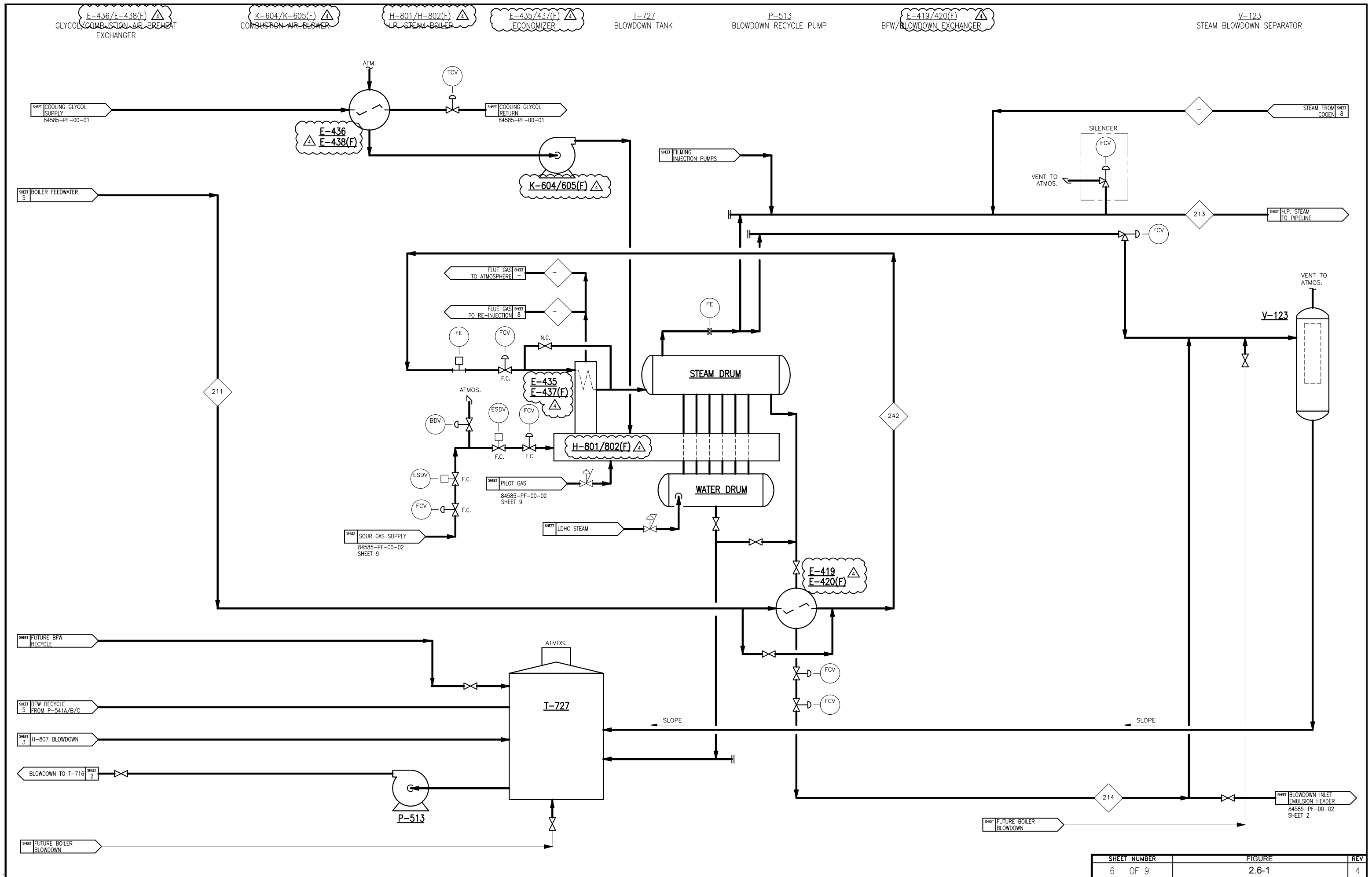
P-537A/B/C(F) ⚠
L.P. BOILER FEEDWATER PUMPS

P-541A/B/C(F) ⚠
H.P. BOILER FEEDWATER PUMPS

P-534
UTILITY BOILER FEEDWATER PUMP



SHEET NUMBER	FIGURE	REV
5 OF 9	2.6-1	4



SHEET NUMBER	FIGURE	REV
6 OF 9	2.6-1	4

P-547
FRESH WATER PUMP

V-133A/B(F)
AIR RECEIVER

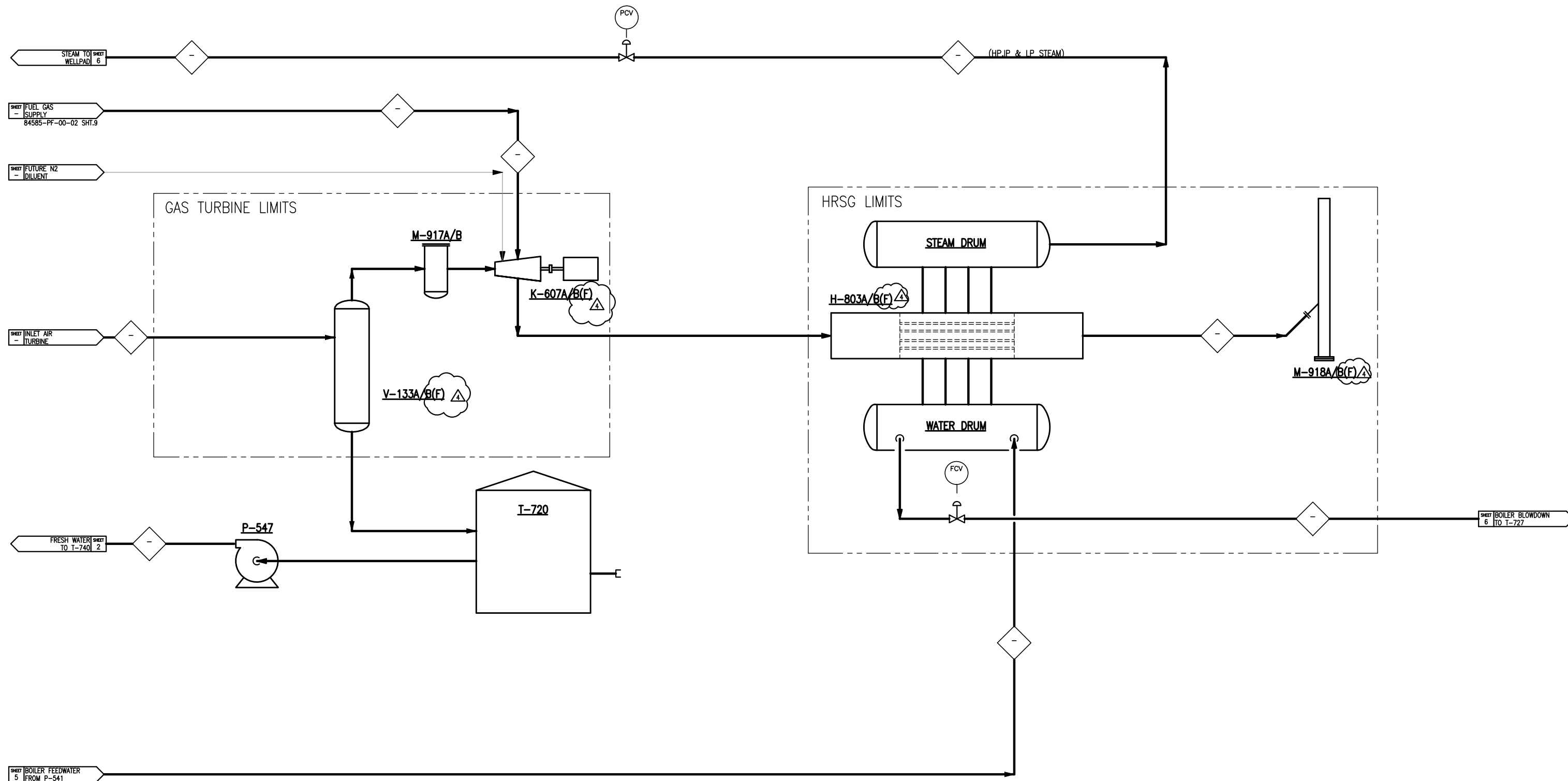
M-917A/B(F)
INLET AIR FILTER

T-720
FRESH WATER TANK

K-607A/B(F)
GAS TURBINE GENERATOR

H-803A/B(F)
HRSG

M-918A/B(F)
EXHAUST STACK



SHEET NUMBER	FIGURE	REV
7 OF 9	2.6-1	4

M-920
FLUE GAS QUENCH VENTURI

P-548
QUENCH VENTURI PUMP

M-921
FLUE GAS SPRAY TOWER

K-630
FLUE GAS BLOWER

E-480
AFTERCOOLER

I-760
SPRAY TOWER TANK

I-761
CAUSTIC TANK

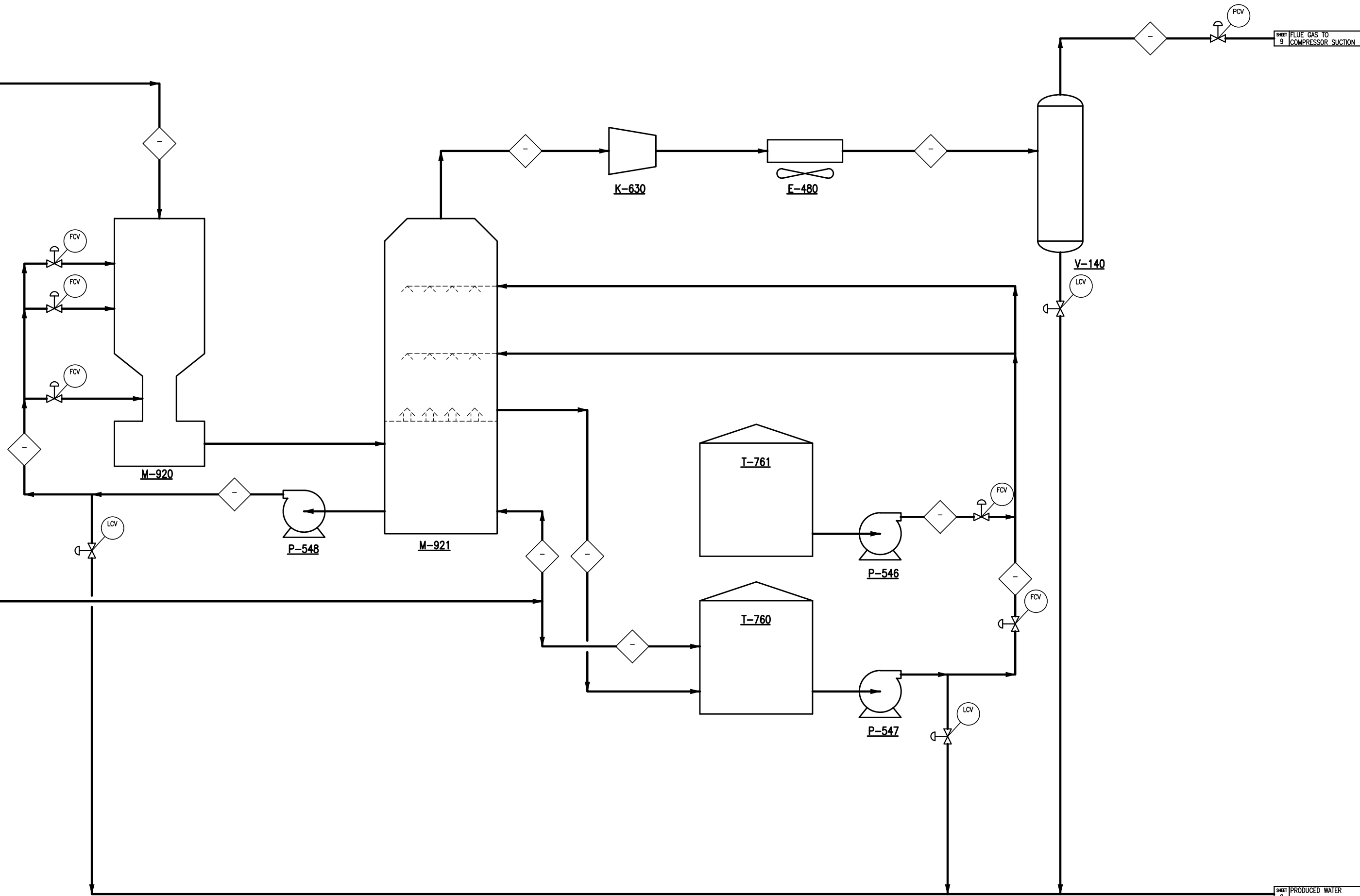
V-140
DISCHARGE SEPARATOR

SHEET 6
FLUE GAS FROM H-801/H-802(F)

SHEET 5
BOILER FEEDWATER FROM P-537A/B/C

SHEET 9
FLUE GAS TO COMPRESSOR SUCTION

SHEET 9
PRODUCED WATER

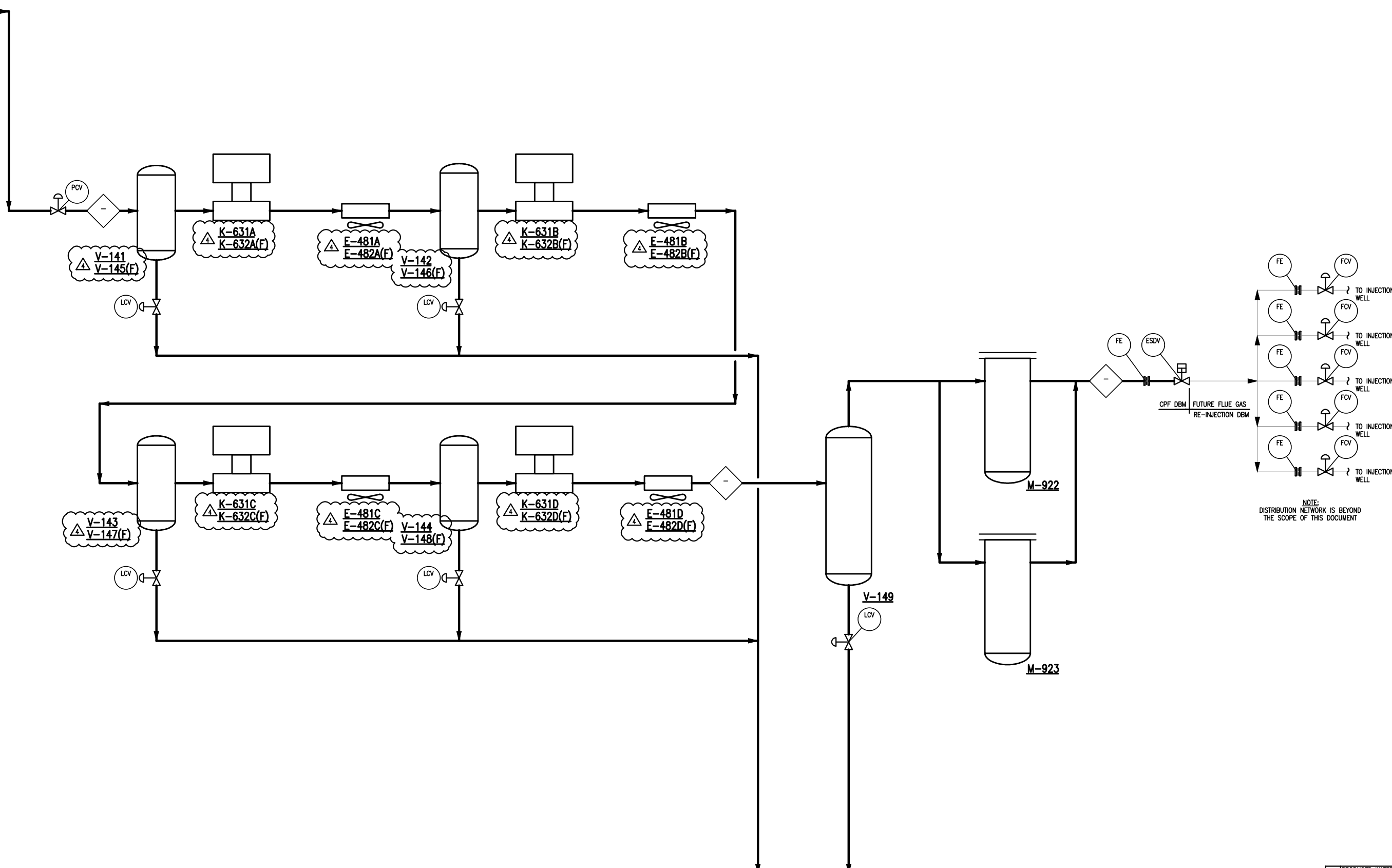


SHEET NUMBER	FIGURE	REV
8 OF 9	2.6.1	4

V-141/145(F) 1ST STAGE SUCTION SCRUBBER	K-631A/B/C/D FLUE GAS COMPRESSOR	E-481A/B/C/D COMPRESSOR COOLER	V-142/146(F) 2ND STAGE SUCTION SCRUBBER
V-143/147(F) 3RD STAGE SUCTION SCRUBBER	K-632A(F)/B(F)/C(F)/D(F) FLUE GAS COMPRESSOR	E-482A(F)/B(F)/C(F)/D(F) COMPRESSOR COOLER	V-144/148(F) 4TH STAGE SUCTION SCRUBBER

V-149 DISCHARGE SEPARATOR
M-922 FLUE GAS AFTER-FILTER
M-923 FLUE GAS AFTER-FILTER

SHEET 2 GAS FROM V-110





SHEET 8 PRODUCED WATER


SHEET PRODUCED WATER
- TO SKIM TANK
84585-PF-00-02 SHT. 7

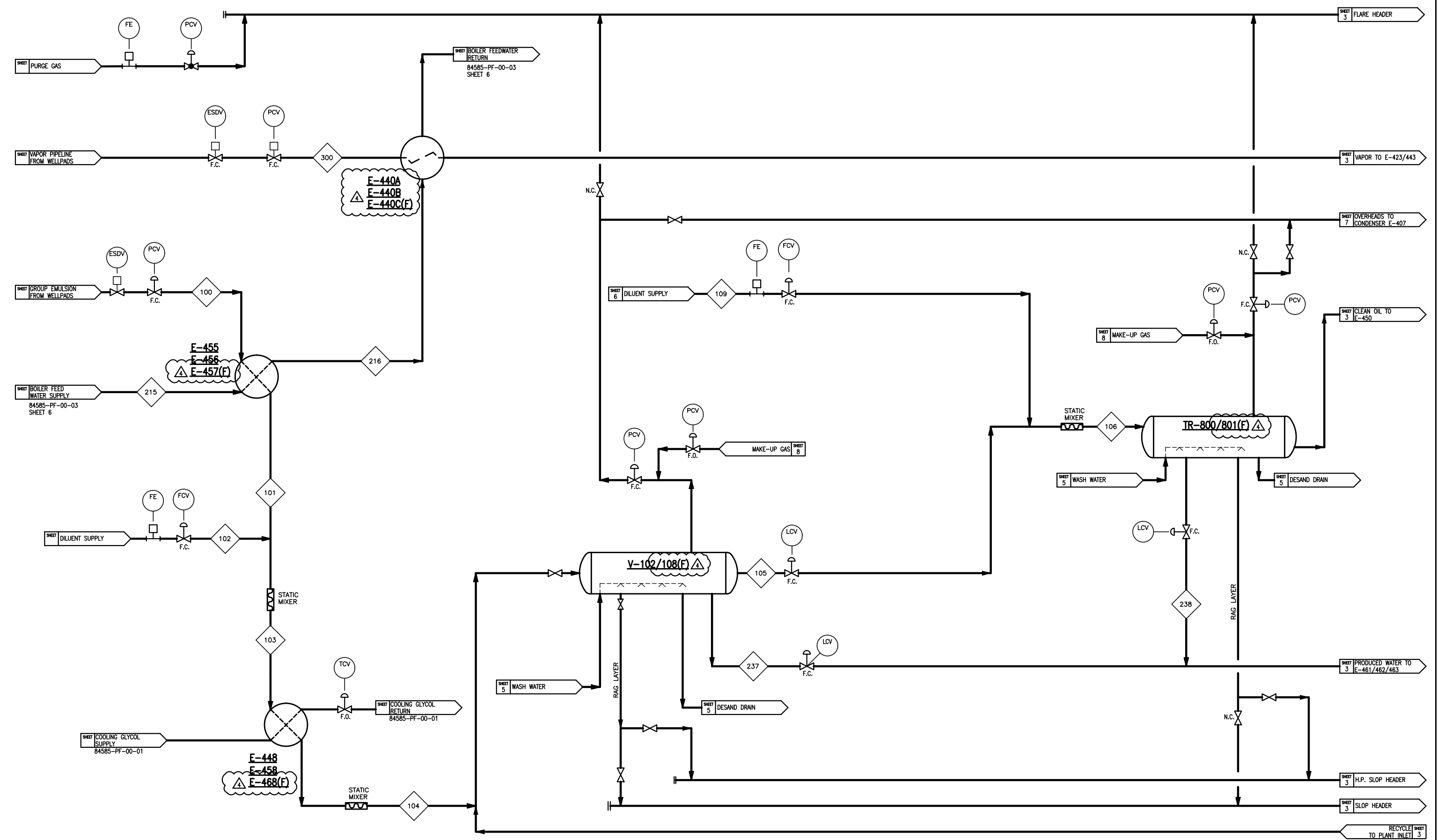
SHEET NUMBER	FIGURE	REV
9 OF 9	2.6-1	4

E-455/456/457(F)  BFW/EMULSION EXCH. EACH 50%
 E-448/458/468(F)  COOLING GLYCOL/EMULSION EXCH. EACH 50%

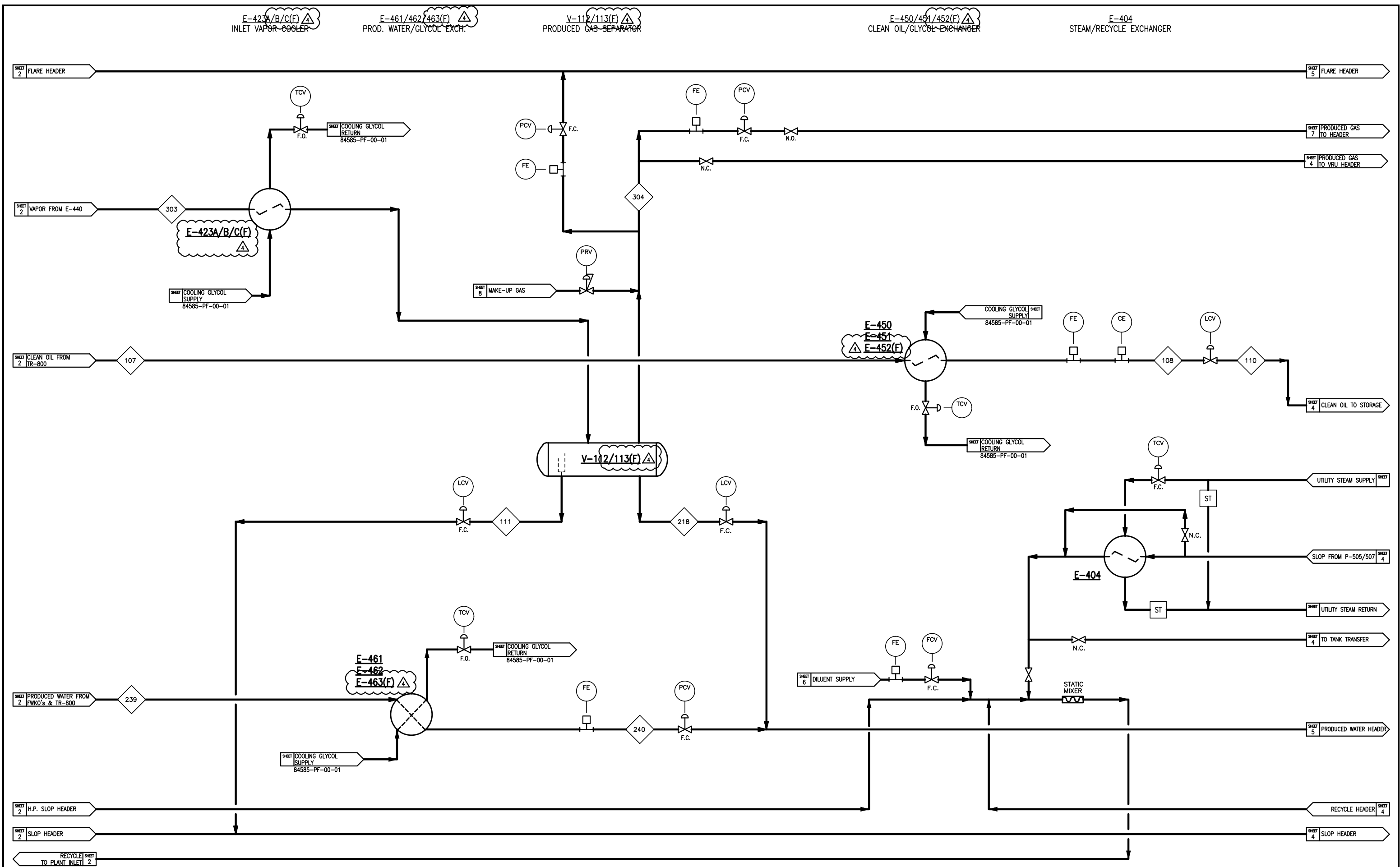
E-440A/B/C(F)  BFW/VAPOR EXCH. EACH 50%

V-102/108(F)  FREE WATER KNOCKOUT

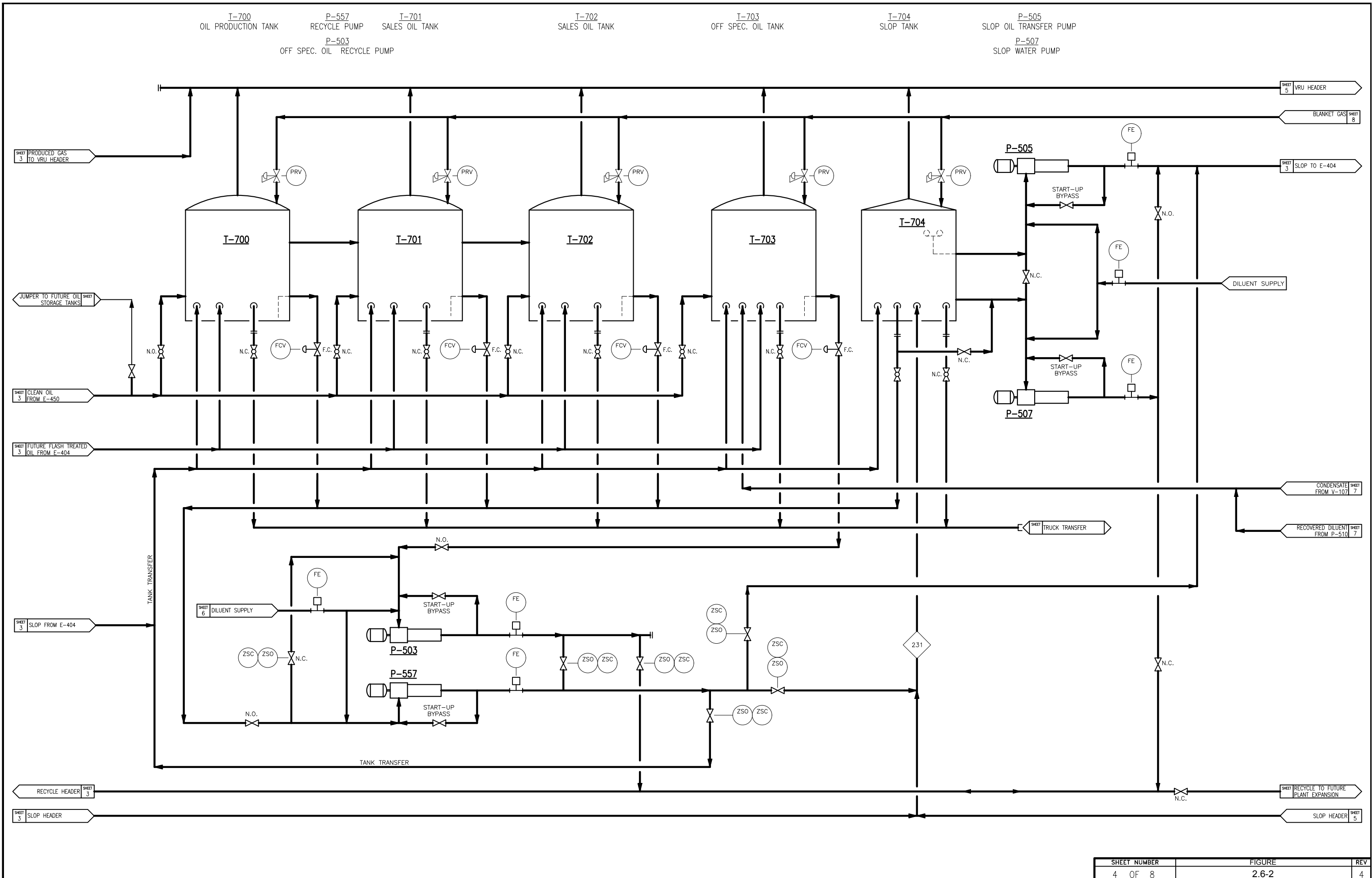
TR-800/801(F)  TREATER



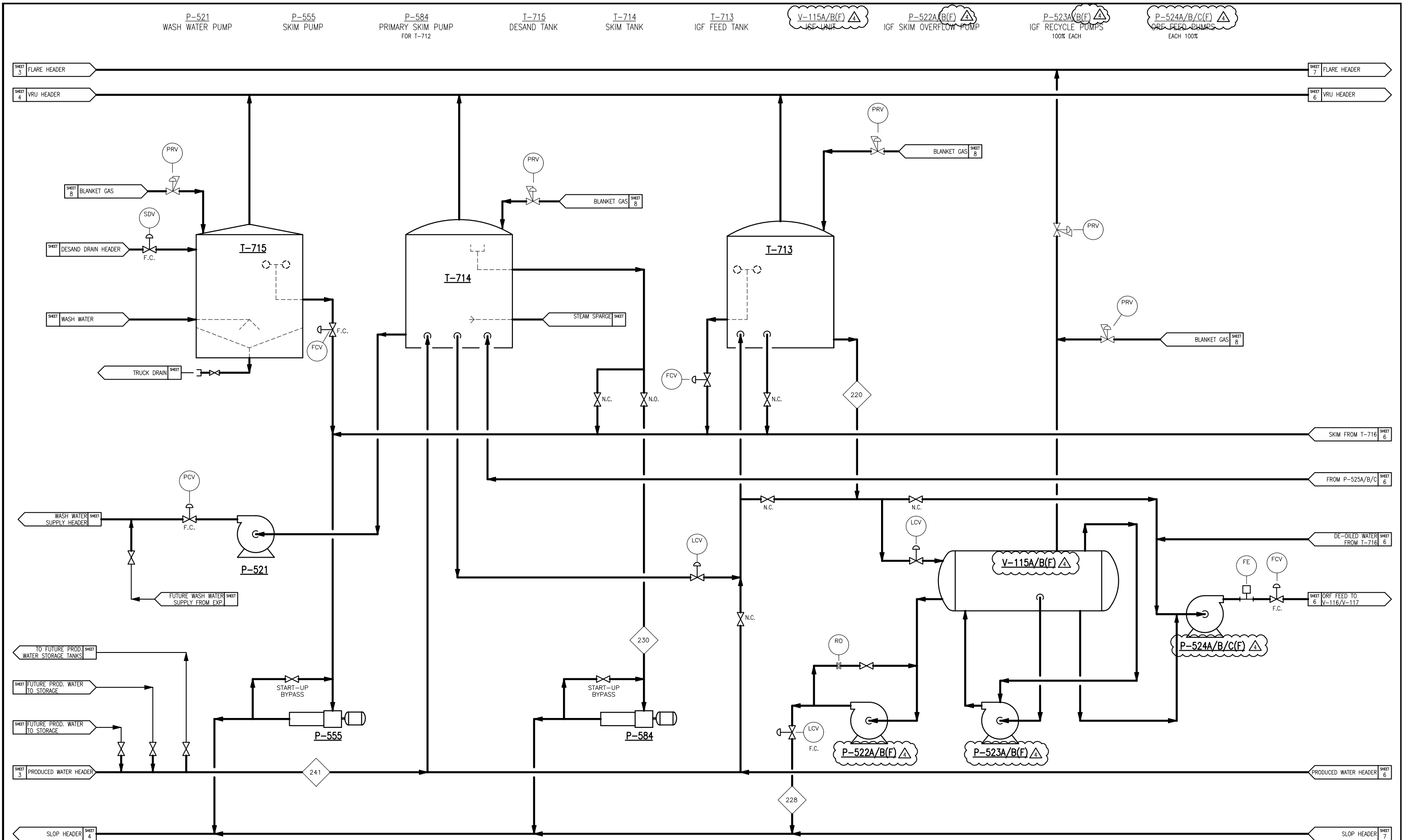
SHEET NUMBER	FIGURE	REV
2 OF 8	2.6-2	4



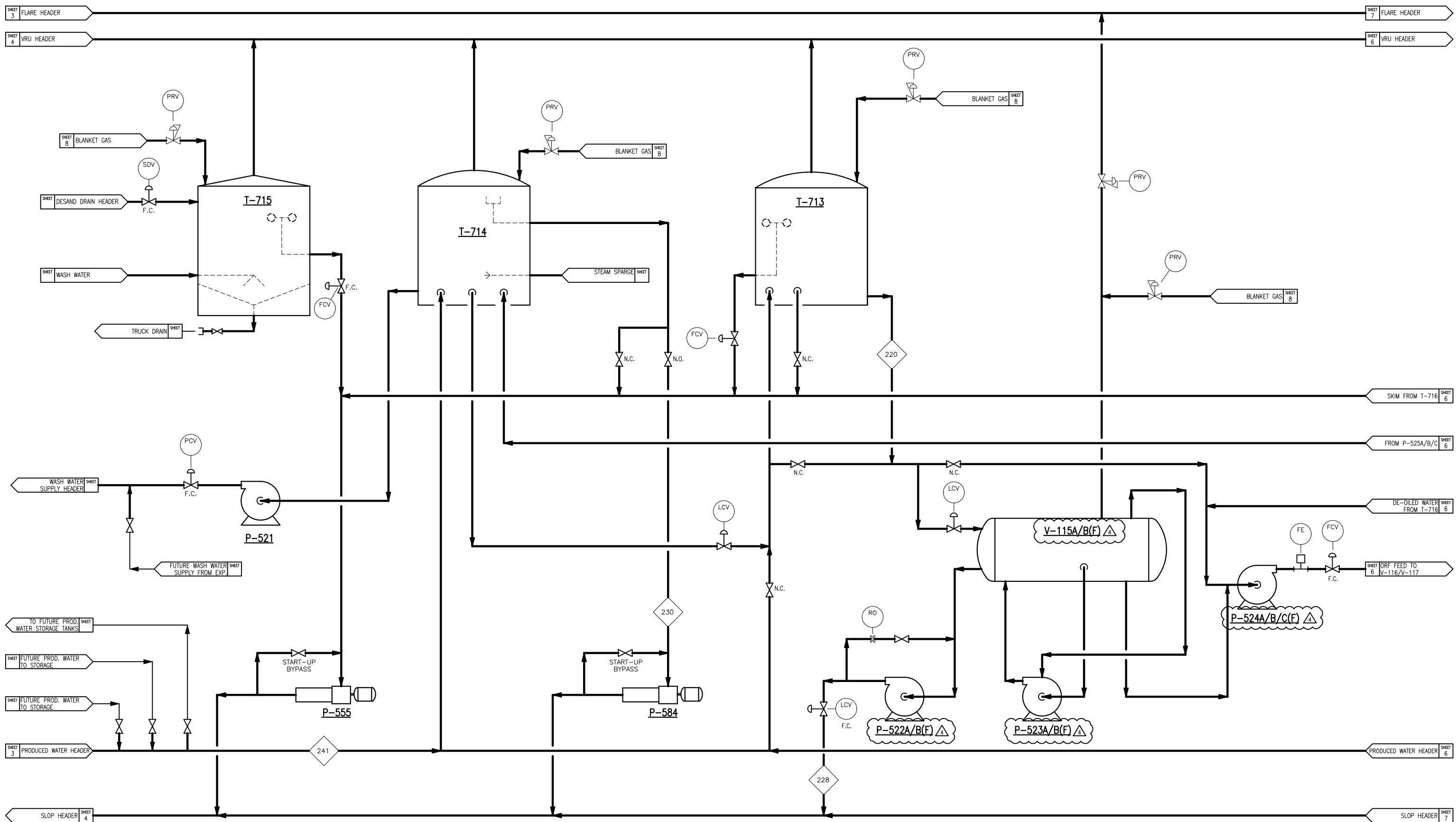
SHEET NUMBER	FIGURE	REV
3 OF 8	2.6-2	4



SHEET NUMBER	FIGURE	REV
4 OF 8	2.6-2	4



P-521 WASH WATER PUMP P-555 SKIM PUMP P-584 PRIMARY SKIM PUMP FOR T-712 I-715 DESAND TANK I-714 SKIM TANK I-713 IGF FEED TANK V-115A/B(F) IGF UNIT P-522A/B(F) IGF SKIM OVERFLOW PUMP P-523A/B(F) IGF RECYCLE PUMPS 100% EACH P-524A/B/C(F) ORE FEED PUMPS EACH 100%



SHEET NUMBER	FIGURE	REV
5 OF 8	2.6-2	4

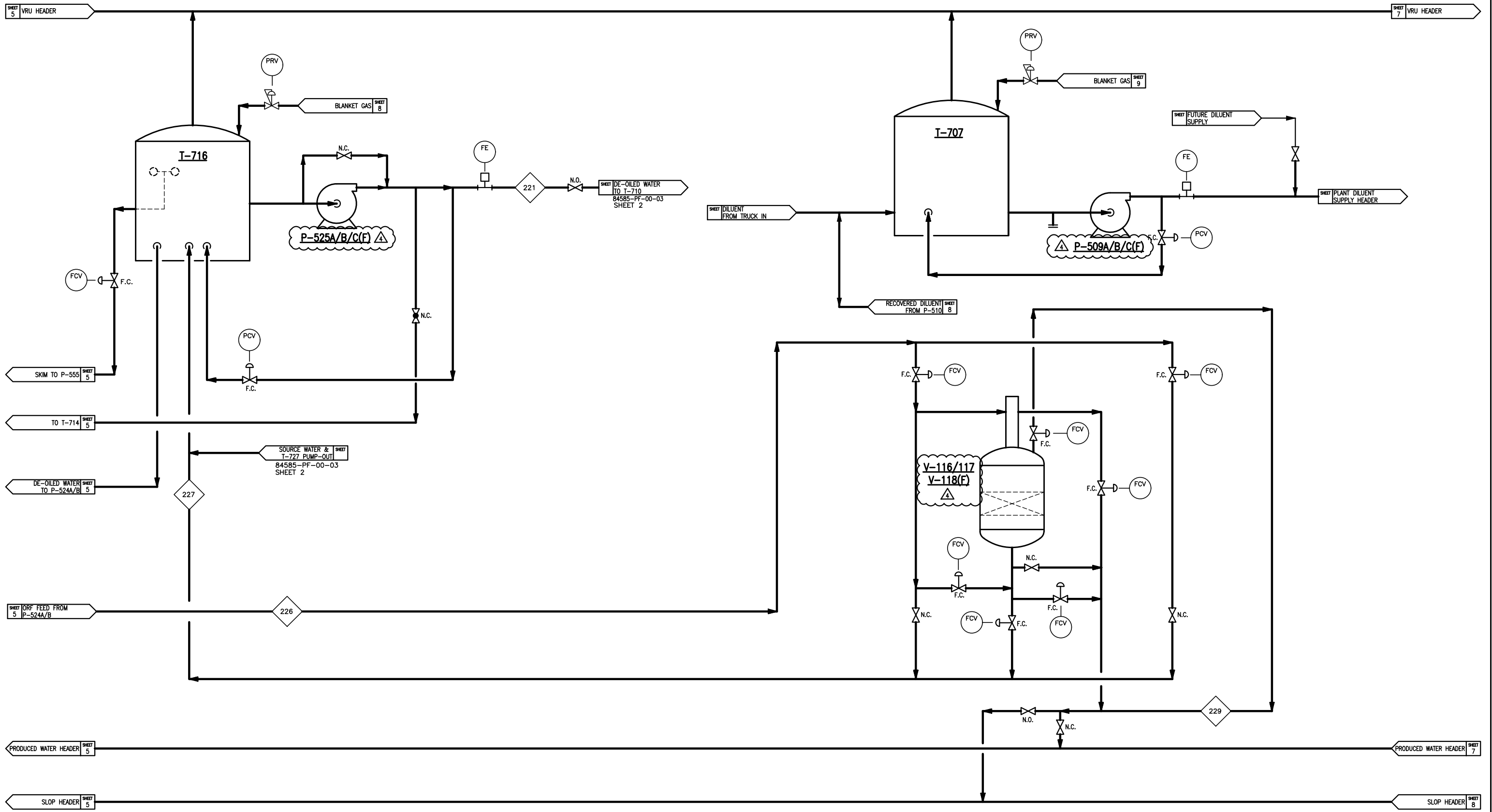
T-716
DE-OILED WATER TANK

P-525 A/B/C(F)
DE-OILED WATER PUMPS

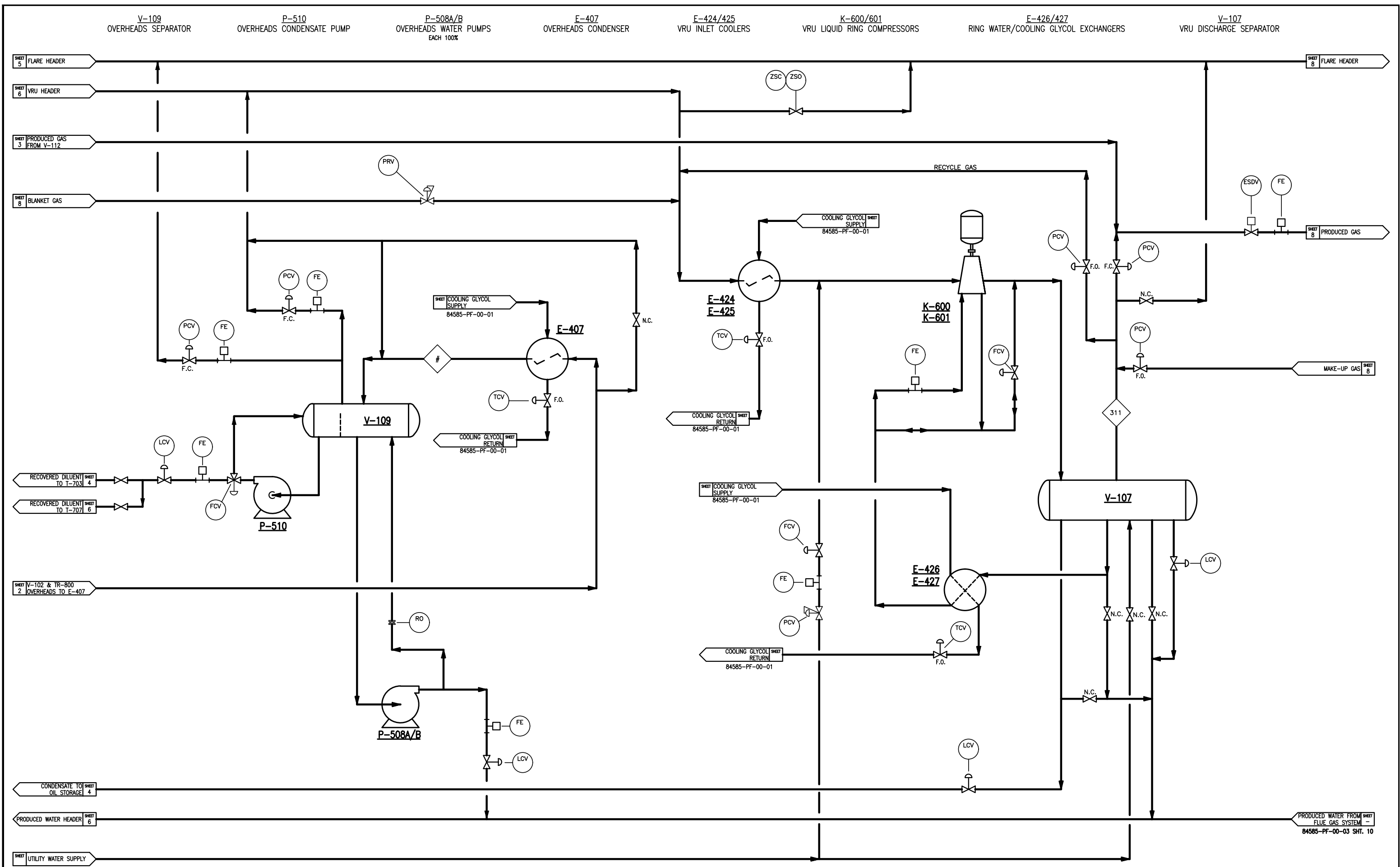
V-116/V-117/V-118(F)
OIL REMOVAL FILTERS

T-707
DILUENT TANK

P-509A/B/C(F)
DILUENT PUMPS

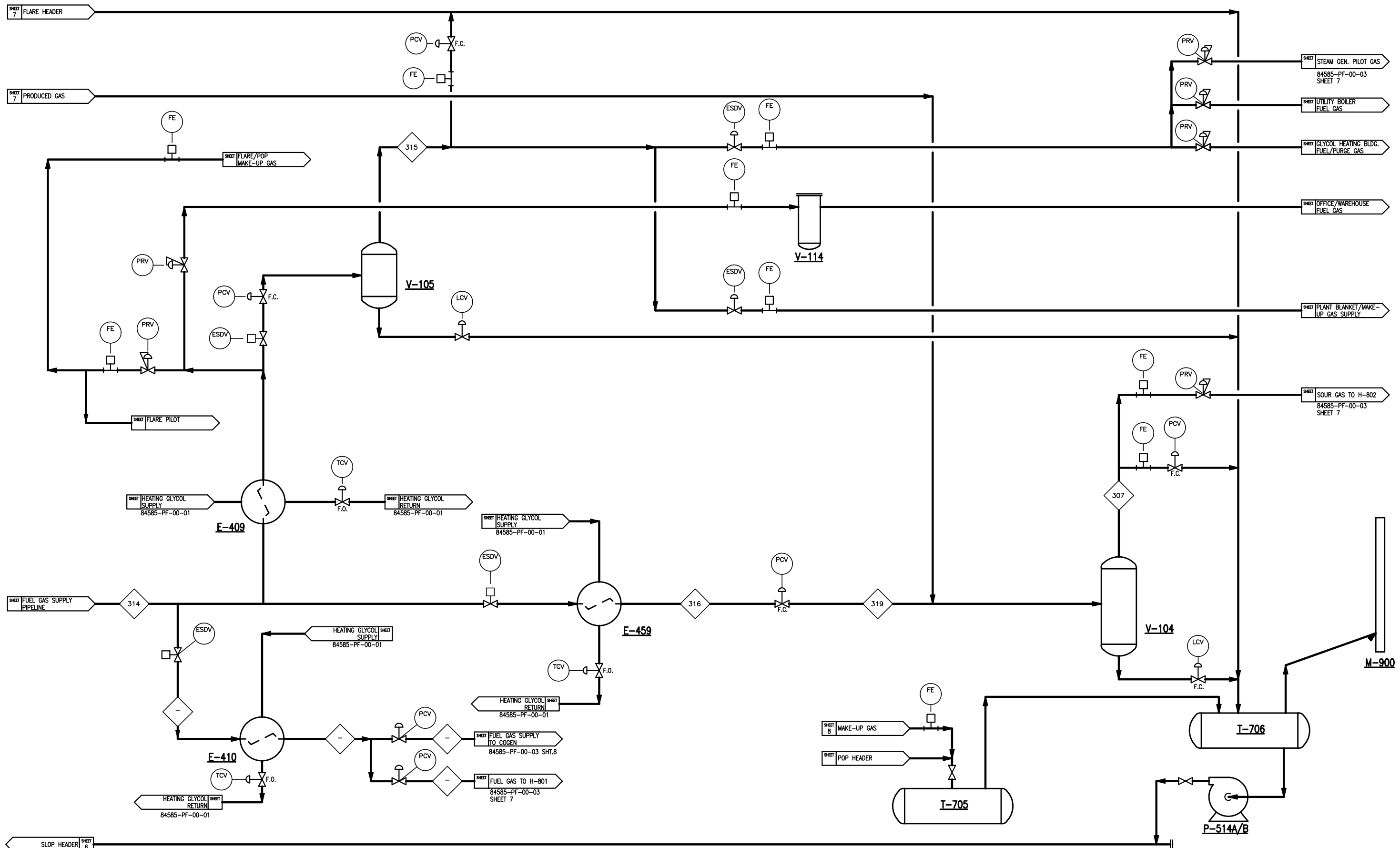


SHEET NUMBER	FIGURE	REV
6 OF 8	2.6-2	4



SHEET NUMBER	FIGURE	REV
7 OF 8	2.6-2	4

E-459 FUEL GAS/HEATING GLY. EXCH. E-410 FUEL GAS/HEATING GLY. EXCH. V-105 SWEET FUEL GAS SCRUBBER E-409 FUEL GAS/HEATING GLY. EXCH. V-114 ODORANT POT V-104 STEAM GEN. FUEL GAS SCRUBBER I-706 FLARE KNOCKOUT DRUM I-705 POP DRUM P-514A/B KNOCKOUT DRUM PUMP EACH 100% M-900 FLARE STACK



SHEET NUMBER	FIGURE	REV
8 OF 8	2.6-2	4

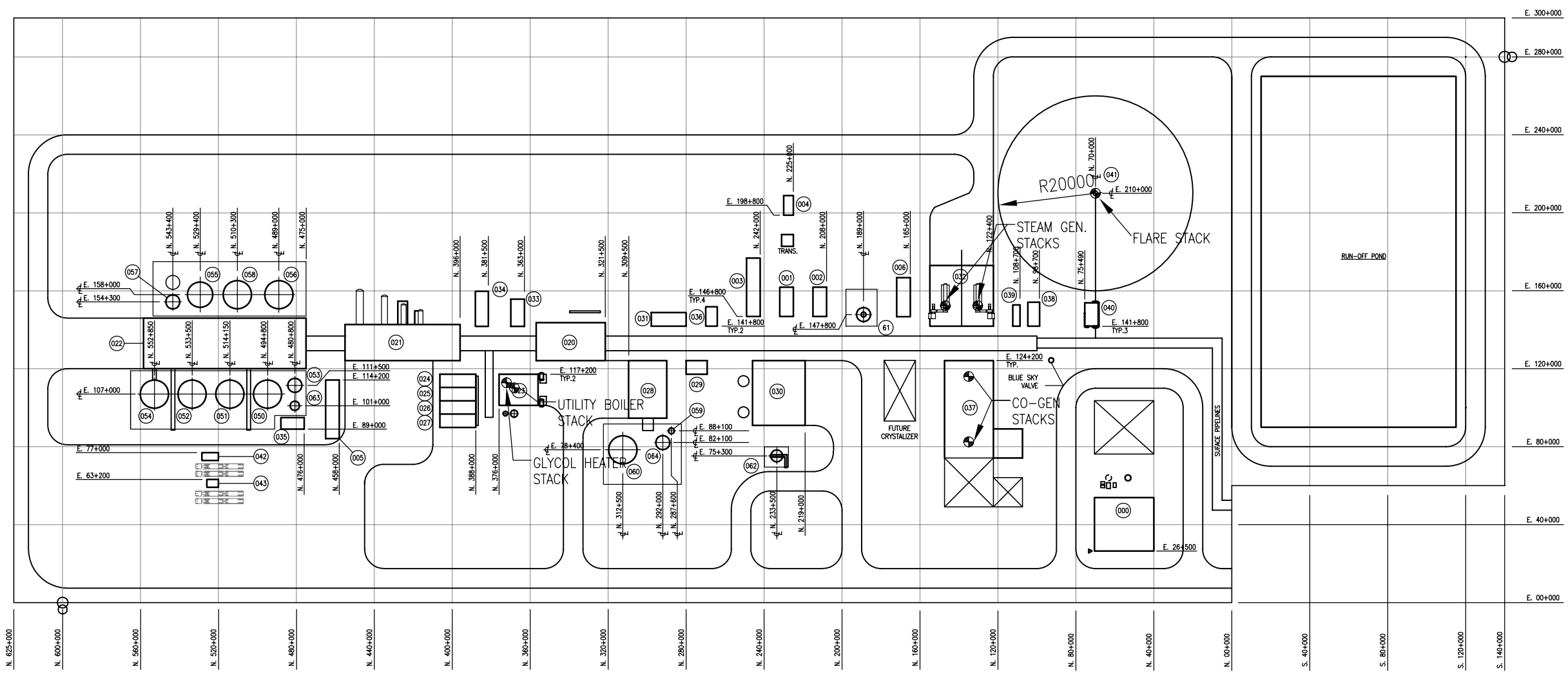
EQUIPMENT LEGEND				
TAG	EQUIPMENT DESCRIPTION	WIDTH	LENGTH	HEIGHT
000	OFFICE/WAREHOUSE	27432	33528	----
001	ELECTRICAL BUILDING SWGR-100	7000	15000	----
002	ELECTRICAL BUILDING SWGR-101	7000	15000	----
003	ELECTRICAL BUILDING MCC-110	7000	30000	----
004	EMERGENCY GENERATOR GEN-100	5000	10000	----
005	ELECTRICAL BUILDING MCC-210	7000	30000	----
006	ELECTRICAL BUILDING MCC-310	7000	20000	----

TAG	EQUIPMENT DESCRIPTION	WIDTH	LENGTH	HEIGHT
020	INLET BUILDING	19400	31000	----
021	TREATER BUILDING	17500	59000	----
022	TANK BUILDING	26000	83400	----
023	GLYCOL BUILDING	20000	16000	----
024	E-421A GLYCOL COOLER	6820	18408	----
025	E-421B GLYCOL COOLER	6820	18408	----
026	E-421C GLYCOL COOLER	6820	18408	----
027	E-421D GLYCOL COOLER	6820	18408	----
028	SOURCE WATER BUILDING	19500	29500	----
029	NITROGEN SKID	7000	10800	----
030	EVAPORATOR BUILDING	26900	33200	----

TAG	EQUIPMENT DESCRIPTION	WIDTH	LENGTH	HEIGHT
031	BFW PUMP BUILDING	7000	17900	----
032	STEAM GENERATOR BUILDING	31200	32600	----
033	CHEMICAL BUILDING	7000	14000	----
034	CLEAN OIL EXCHANGER SKID	6700	18000	----
035	DILBIT TRANSFER SKID	6000	12000	----
036	INSTR. AIR SKID	7000	10000	----
037	COGEN. BUILDING	25000	50000	----
038	FUEL GAS BUILDING	6000	12300	----
039	FUEL GAS EXCHANGER SKID	3700	13000	----
040	FLARE KNOCKOUT BUILDING	6000	9144	----
041	M-900 FLARE STACK	219#	----	39100

TAG	EQUIPMENT DESCRIPTION	WIDTH	LENGTH	HEIGHT
042	DILUENT METER SKID	4000	8500	----
043	DILBIT METER SKID	4000	6000	----
050	T-700 OIL PRODUCTION TANK	14478#	N/A	----
051	T-701 SALES OIL TANK	14478#	N/A	----
052	T-702 OFF SPEC. BITUMEN TANK	14478#	N/A	----
053	T-703 SLOP TANK	7163#	N/A	----
054	T-706 DILUENT TANK	14478#	N/A	----
055	T-712 SKIM TANK	12954#	N/A	----
056	T-713 SURGE TANK	14478#	N/A	----
057	T-714 DESAND TANK	7163#	N/A	----

TAG	EQUIPMENT DESCRIPTION	WIDTH	LENGTH	HEIGHT
058	T-715 DE-OILED WATER TANK	14478#	N/A	----
059	T-719 BRINE DISSOLVING TANK	2438#	N/A	----
060	T-725 BOILER FEEDWATER TANK	14478#	N/A	----
061	T-727 STEAM GEN. BLOWDOWN TANK	7163#	N/A	----
062	T-728 EVAPORATOR WASTE TANK	6096#	N/A	----
063	T-732 FLOOR DRAIN TANK	2886#	N/A	----
064	T-740 SOURCE WATER TANK	7163#	N/A	----

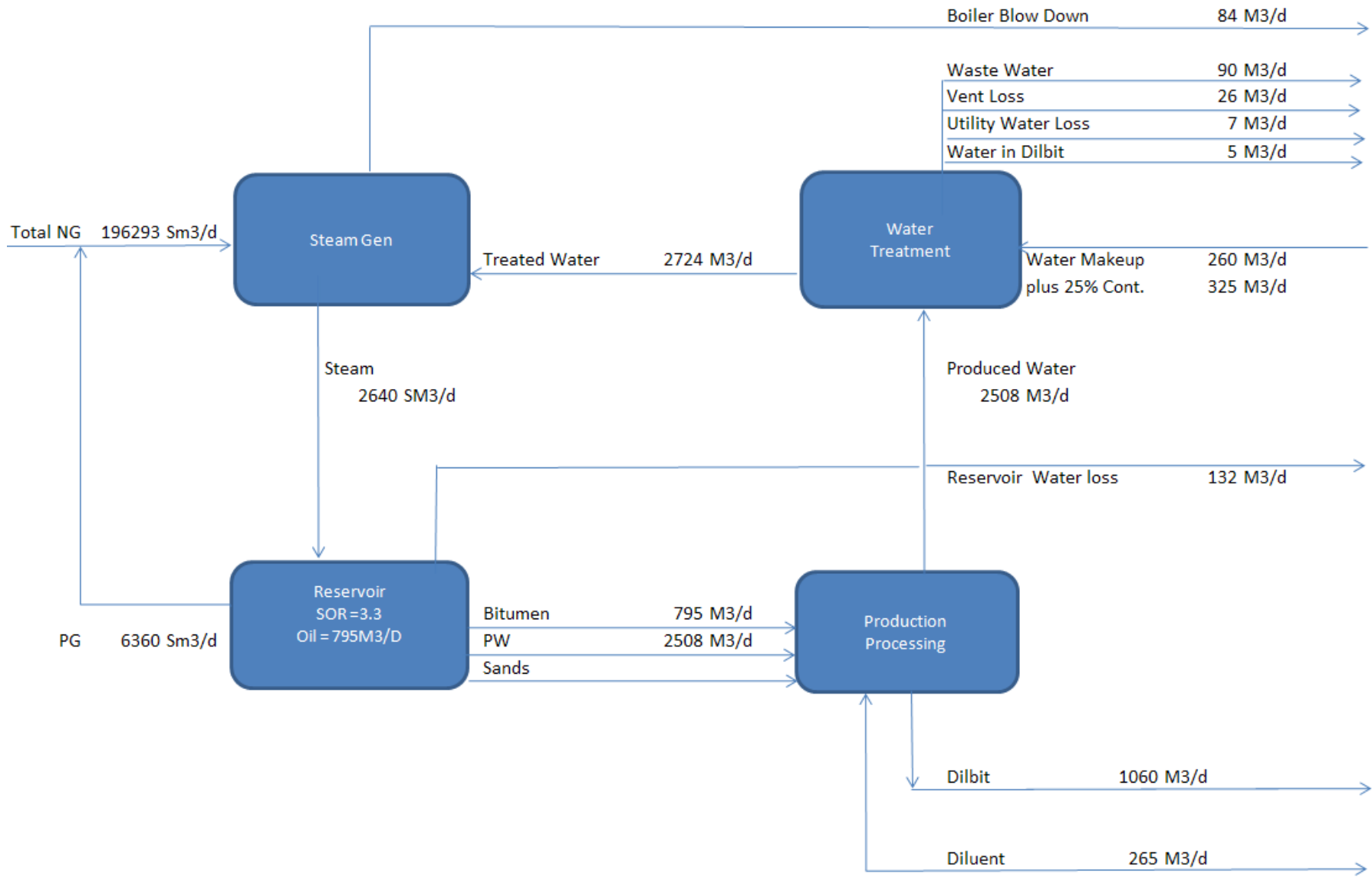



Source: Amec BDR Pilot West Ells SAGD Facility Plot Plan Drawing 84585-A-00-01.

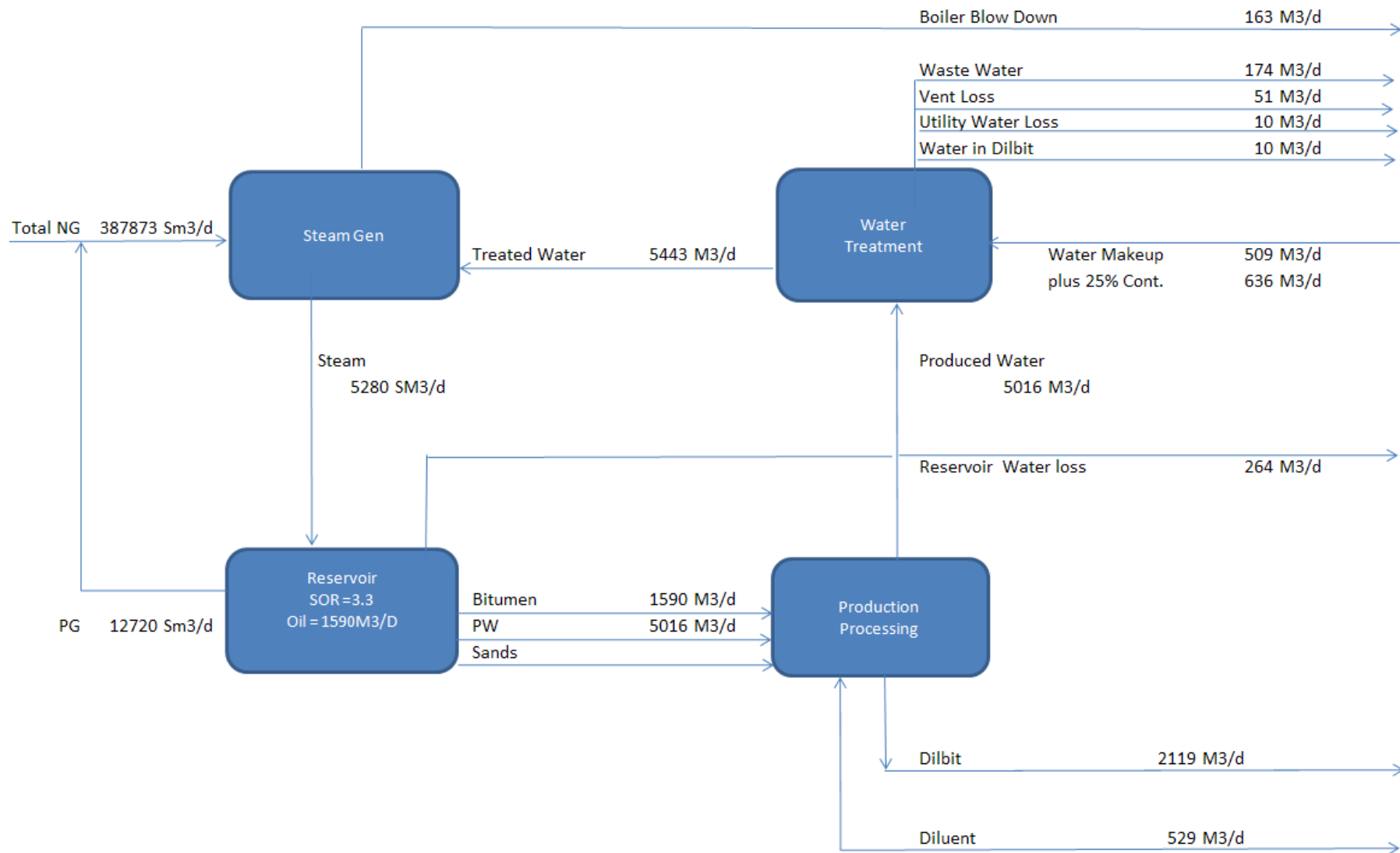
West Ells SAGD Project


TITLE: **Central Processing Facility Plot Plan**

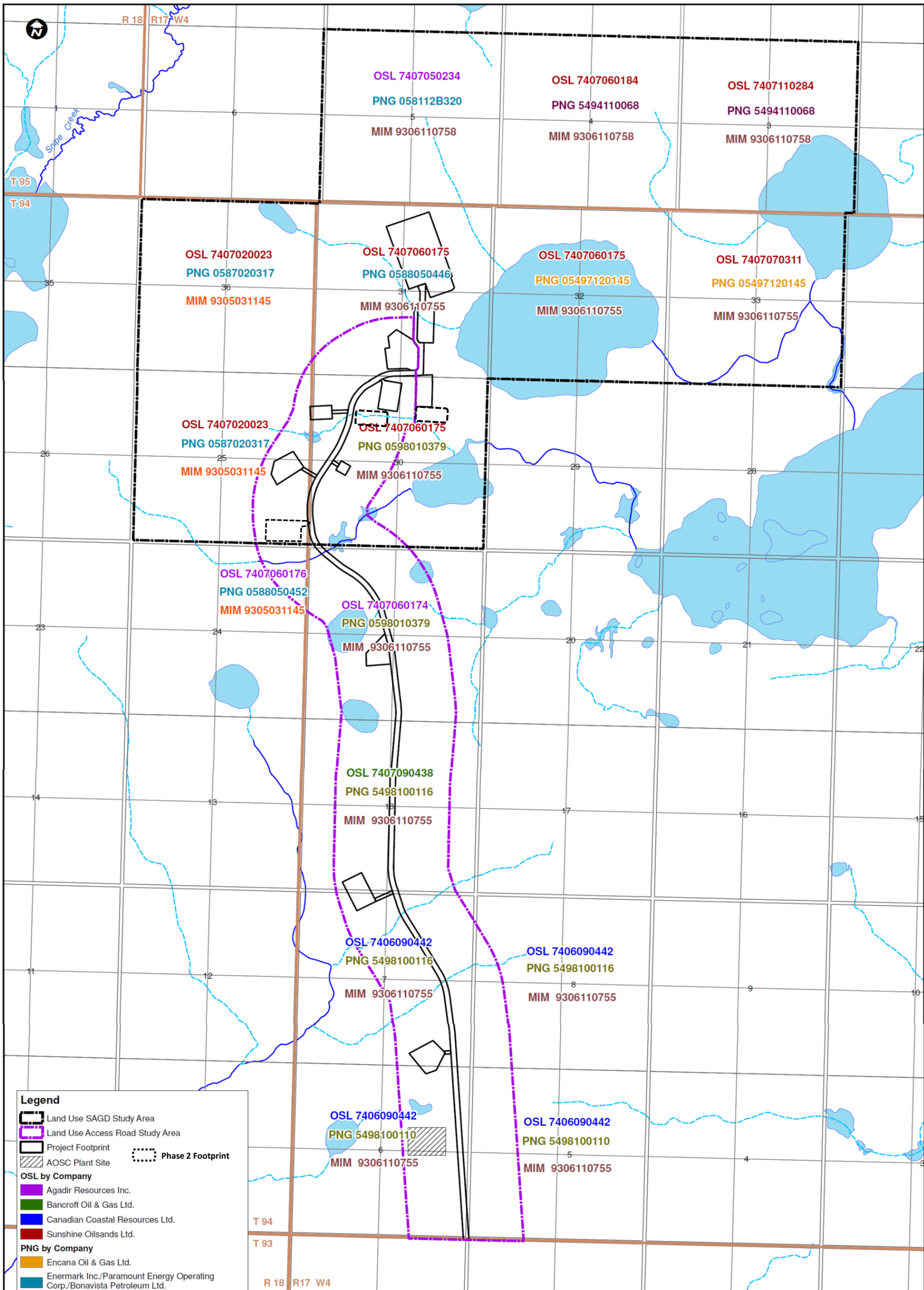
FILE: Figure 2.6-3 Central Facility Pad Plot Plan.dwg	FIGURE:
DRAWN: AD	2.6-3
CHECKED: KY	
DATE: Nov 28/08	
PROJECT: 08-105	



	West Ells SAGD Project	
	TITLE: Phase 1 Water and Materials Balance 5% Reservoir Water Loss	Drawn By: TW Date: Nov 2009
		Figure: 2.7-1



	West Ells SAGD Project	
	TITLE: Phase 2 Water and Materials Balance 5% Reservoir Water Loss	Drawn By: TW Date: Nov 2009
		Figure: 2.7-2



Legend

- Land Use SAGD Study Area
- Land Use Access Road Study Area
- Project Footprint
- Phase 2 Footprint
- AOSC Plant Site

OSL by Company

- Agadir Resources Inc.
- Bancroft Oil & Gas Ltd.
- Canadian Coastal Resources Ltd.
- Sunshine Oilsands Ltd.

PNG by Company

- Encana Oil & Gas Ltd.
- Enemark Inc./Paramount Energy Operating Corp./Bonavista Petroleum Ltd.
- Giant Grosmont Petroleum Ltd./Paramount Energy Operating Corp./Encana Oil & Gas Ltd.
- Paramount Energy Operating Corp.

MIM by Company

- Athabasca Minerals Inc.
- Grizzly Diamonds Ltd.

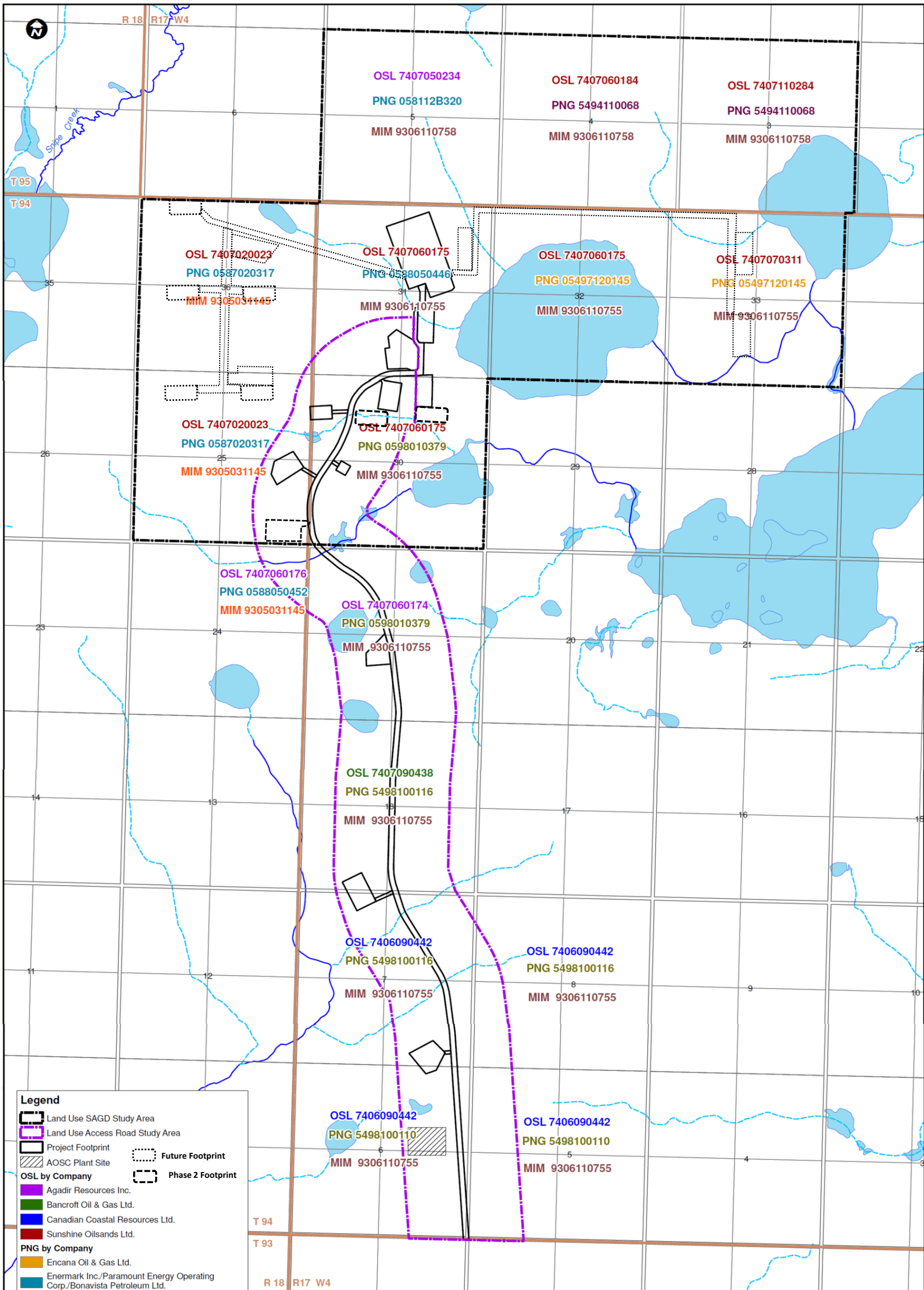


West Eils SAGD Project

Phase 1 and 2 Subsurface Dispositions

DRAWN: SL	FIGURE:
CHECKED: CC	
DATE: Dec 5/08	4.11-1A
PROJECT: 08-015	

REF: AbaData, 2008.



Legend

- Land Use SAGD Study Area
- Land Use Access Road Study Area
- Project Footprint
- Future Footprint
- AOSC Plant Site
- Phase 2 Footprint

OSL by Company

- Agadir Resources Inc.
- Bancroft Oil & Gas Ltd.
- Canadian Coastal Resources Ltd.
- Sunshine Oilsands Ltd.

PNG by Company

- Encana Oil & Gas Ltd.
- Enemark Inc./Paramount Energy Operating Corp./Bonavista Petroleum Ltd.
- Giant Grosmont Petroleum Ltd./Paramount Energy Operating Corp./Encana Oil & Gas Ltd.
- Paramount Energy Operating Corp.

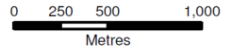
MIM by Company

- Athabasca Minerals Inc.
- Grizzly Diamonds Ltd.



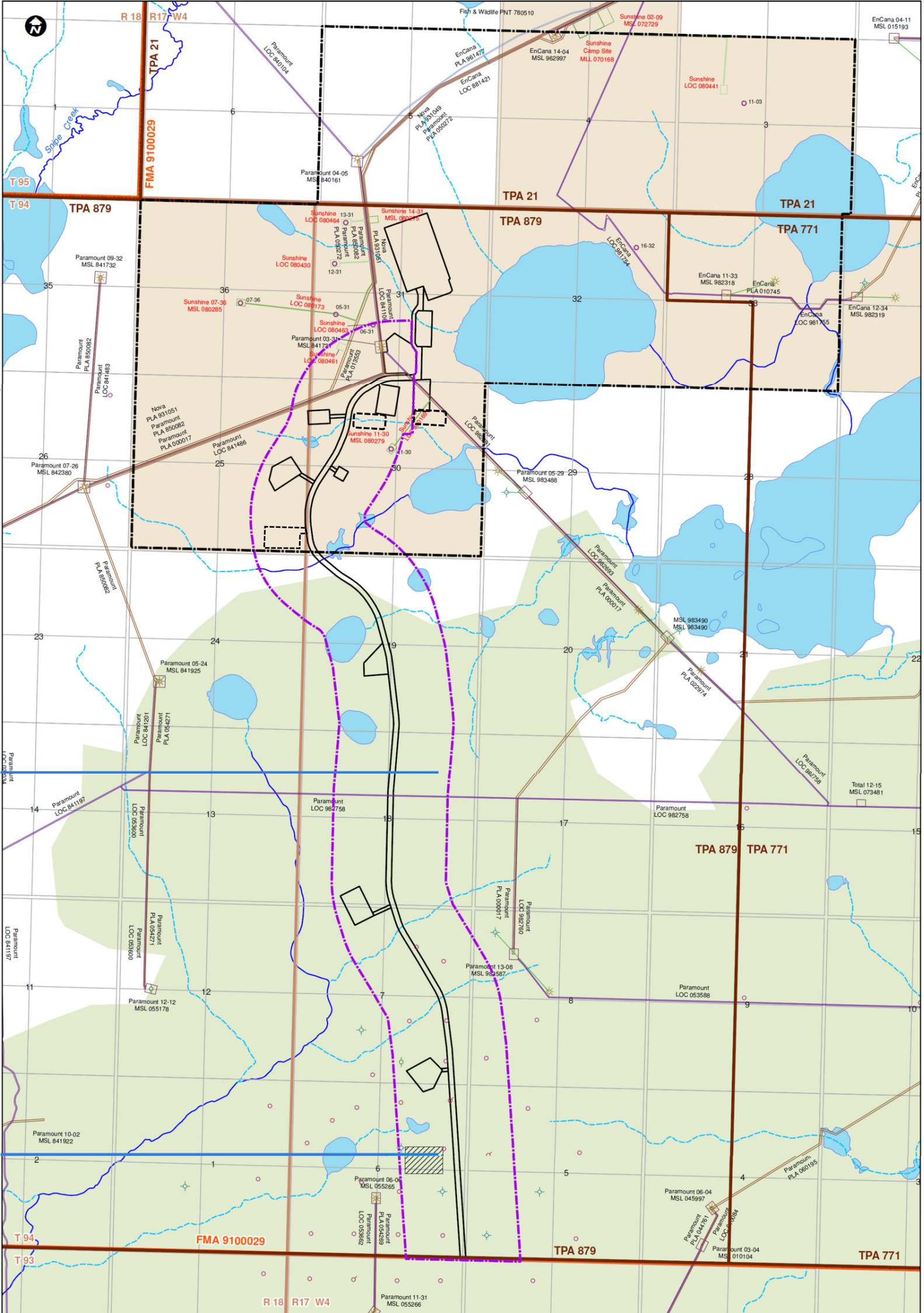
West Eils SAGD Project

Entire Project Subsurface Dispositions



DRAWN: SL	FIGURE:
CHECKED: CC	4.11-1B
DATE: Dec 5/08	
PROJECT: 08-015	

REF: ABAData, 2008.



Legend

- Land Use SAGD Study Area
- Land Use Access Road Study Area
- Project Footprint
- Sunshine Oilsands Lease
- AOSC Plant Site
- TPA
- FMA
- Caribou Zone
- Phase 2 Footprint

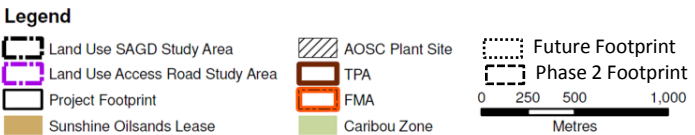
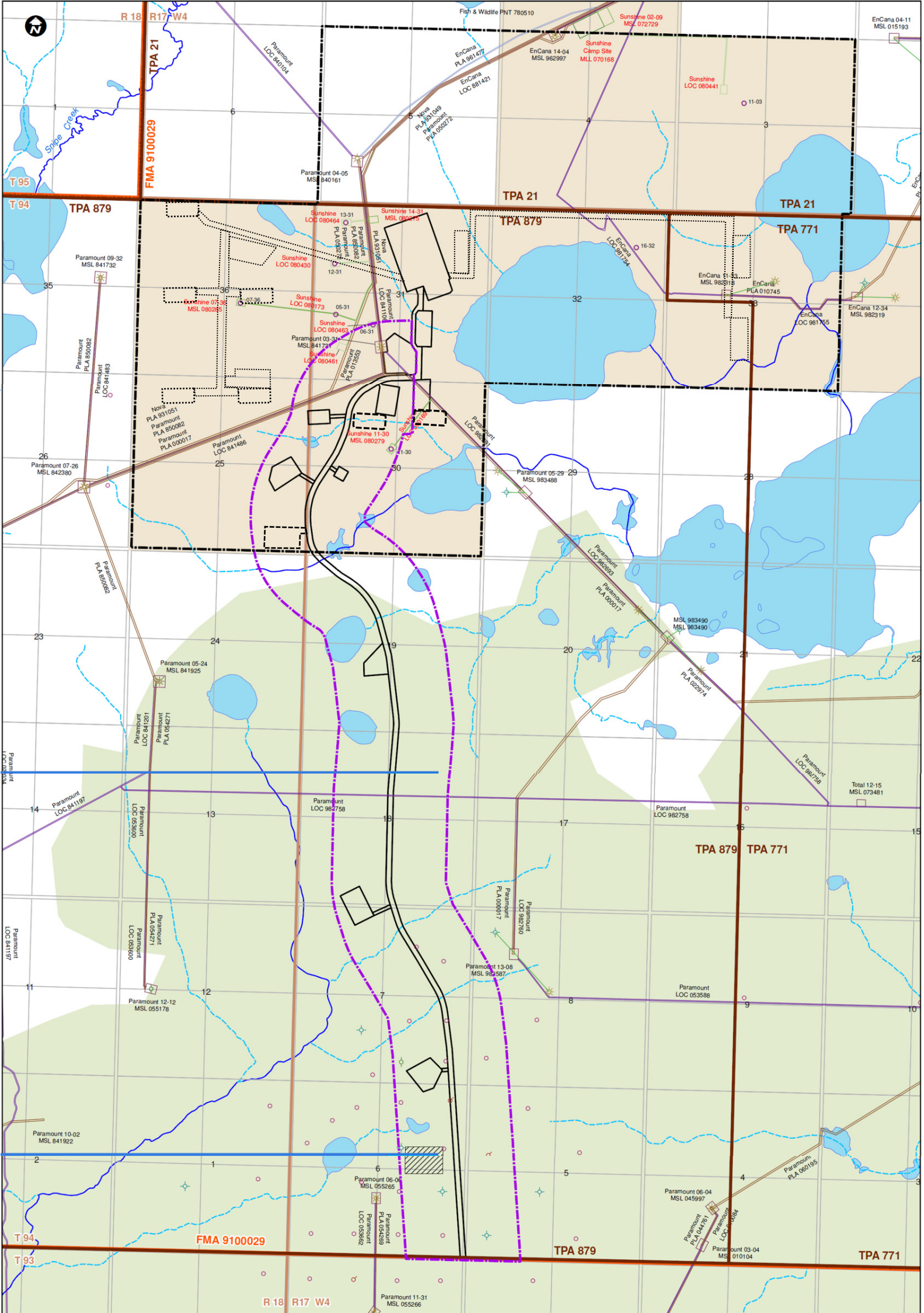
0 250 500 1,000
Metres

West Eils SAGD Project

TITLE: **Phase 1 and Phase 2 Surface Dispositions**

DRAWN: SL	FIGURE:
CHECKED: CC	
DATE: Dec 5/08	4.11-2A
PROJECT: 08-015	

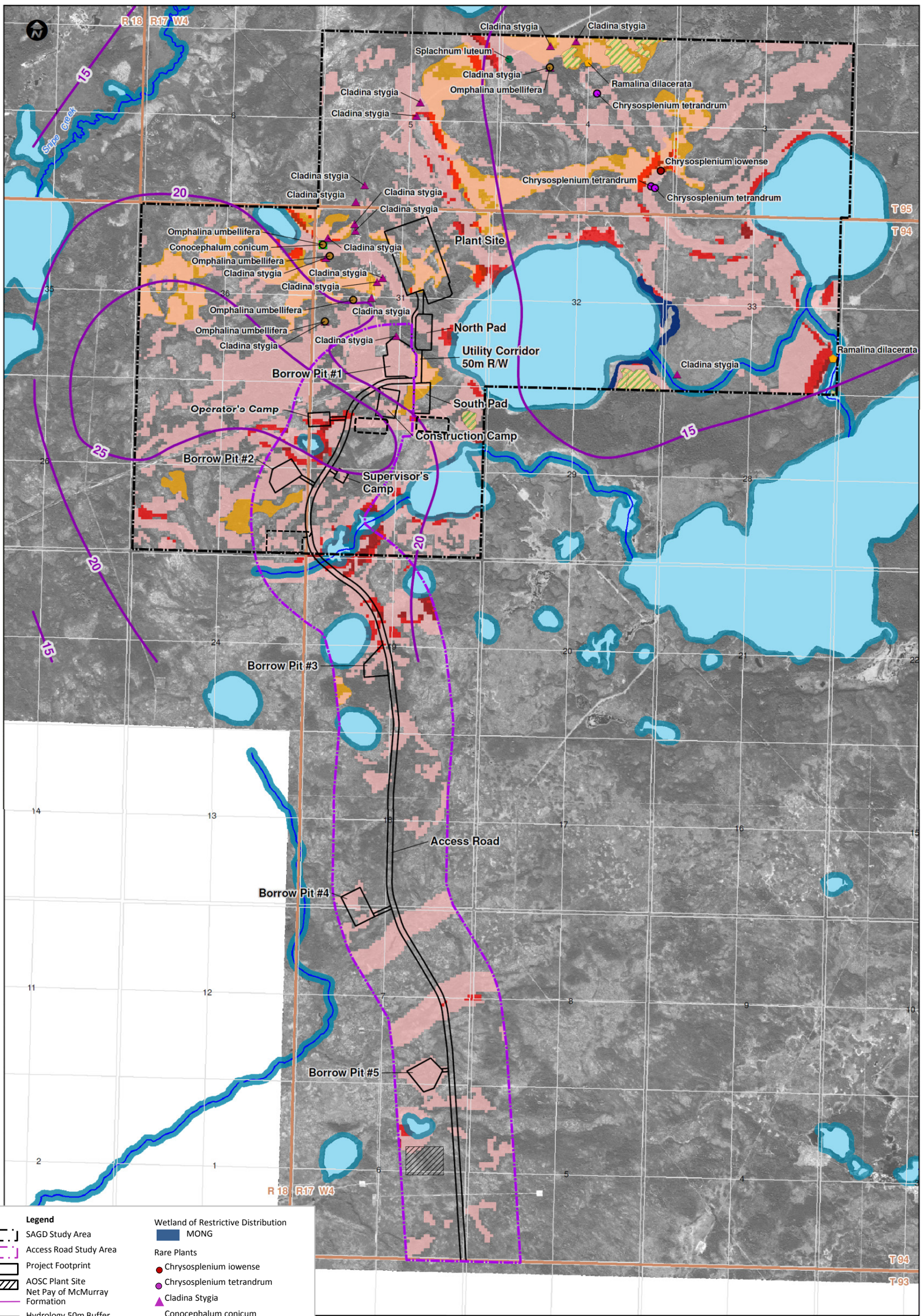
REF: AbaData, 2008.



West Eils SAGD Project

TITLE: Entire Project Surface Dispositions	DRAWN: SL CHECKED: CC DATE: Dec 5/08 PROJECT: 08-015	FIGURE: 4.11-2B
--	---	-------------------------------

REF: AbaData, 2008.



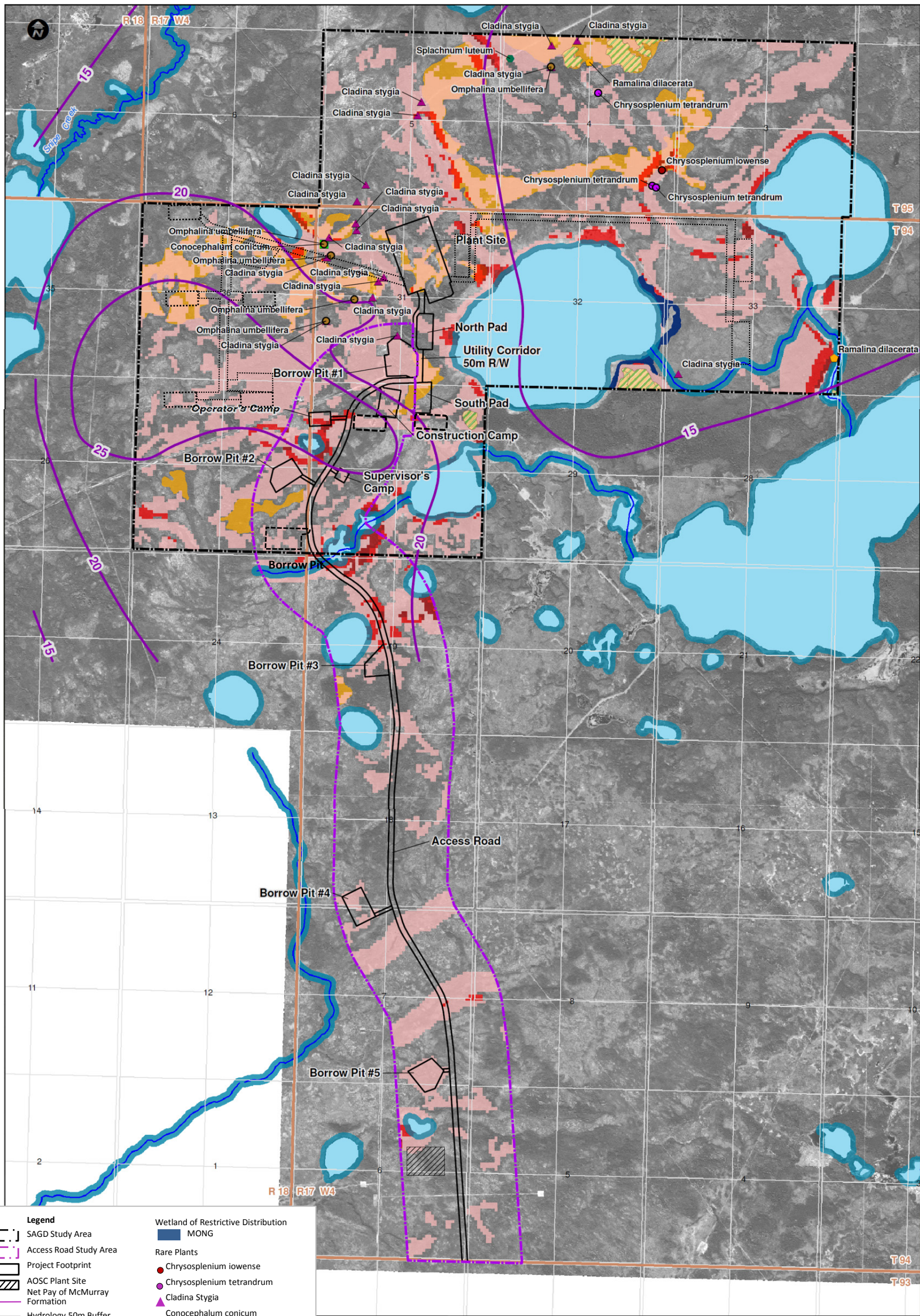
Legend	
	SAGD Study Area
	Access Road Study Area
	Project Footprint
	AOSC Plant Site
	Net Pay of McMurray Formation
	Hydrology 50m Buffer
	Old Growth Archaeological Potential
	Moderate Potential
	Moderate to High Potential
	High Potential
	Wetland of Restrictive Distribution MONG
	Rare Plants Chryso-splenium iowense
	Chryso-splenium tetrandrum
	Cladina Stygia
	Conocephalum conicum
	Omphalina umbellifera
	Ramalina dilacerata
	Splachnum luteum
	Phase 2 Footprint



West Elys SAGD Project

TITLE: **Phase 1 and Phase 2 Constraints Mapping**

Figure: **4.12-1A**



Legend

SAGD Study Area	Wetland of Restrictive Distribution MONG
Access Road Study Area	Rare Plants
Project Footprint	Chrysosplenium iowense
AOSC Plant Site	Chrysosplenium tetrandrum
Net Pay of McMurray Formation	Cladina Stygia
Hydrology 50m Buffer	Conocephalum conicum
Old Growth	Omphalina umbellifera
Archaeological Potential	Ramalina dilacerata
Moderate Potential	Splachnum luteum
Moderate to High Potential	Future Footprint
High Potential	Phase 2 Footprint