

Cirras & Drawing conversion project

- 1. Who we are**
- 2. What we do**
- 3. What we can do**

1. Who we are

Established in Singapore in 1999, Primalux Technology was founded on a vision of providing engineering industries with integrated, innovative and cost-effective computer solutions. The strength of the company comes from the global exposure and rich experiences of its founders in the process engineering industries, system design and implementation.

At the moment the number of employees involved in the work on the Sakhalin 2 project is about 40 people (including draftsmen, engineers, quality control specialists, etc.)

2. What we do

Working with Sakhalin Energy, the company provides a software package CIRRAS. CIRRAS is an acronym for Corrosion Integrity Risk Reliability Assurance System, in the integrity management industry it belongs to the group of Corrosion Integrity Management Systems (CIMS).

Also in CIRRAS project there is a subproject – Drawing Conversion Project (DCP). The goal of DCP is the conversion of more than 70,000 drawings of Sakhalin Energy into the format of DWG.

2.1 - Task & Responsibilities

Responsibilities:

- Convert the drawings error-free, with speed and accuracy.
- Check correct CAD Attribute names (Smart Drawing).
- Perform self-check of the drawings (Pre-checks, L0 checks & Cross Checks).

Tasks:

- Convert drawing from Source file (PDF/DGN/TIFF/DWG) to **DWG 2010** File format.
 - Download "Source file" from "Drawing Task" in EDMS was assigned by your Batch Owner (BO).
 - Before conversion - Perform Pre-check guidelines if any doubts ask your BO.
 - During conversion - The Technical Query (TQ) should be verified with BO to minimize error.
 - After conversion - Perform Self check (L0 checklist), the converted drawing must be **error-free**.
 - After L0 checks has passed, upload the converted file into the server.
 - If unnecessary and silly errors are found more than once, then **Corrective Action Report (CAR)** will be raised.

2.2- SEIC – Drawing Type

For this conversion project, we will be covering a total of 14 different drawings type for each Asset & Locations. All the drawings listed below have to be converted. However Drawing types 5 to 14 will also need to be a Smart Drawing.

1. Certified Equipment Drawings.
2. Equipment Location Plan.
3. Facility Block Diagram.
4. GA Civil & Structural.
5. GA Overall Plan Drawings.
6. GA Pipeline Schematic.
7. GA Piping Drawings.
8. Isometric Drawings.
9. Pipeline Detail Drawings.
10. Plot Plans Drawings.
11. Process Engineering Flow Scheme (PEFS).
12. Process Flow Scheme (PFS).
13. Vessel Detail Drawings.
14. Piping & Instrumentation Diagram (P&ID).

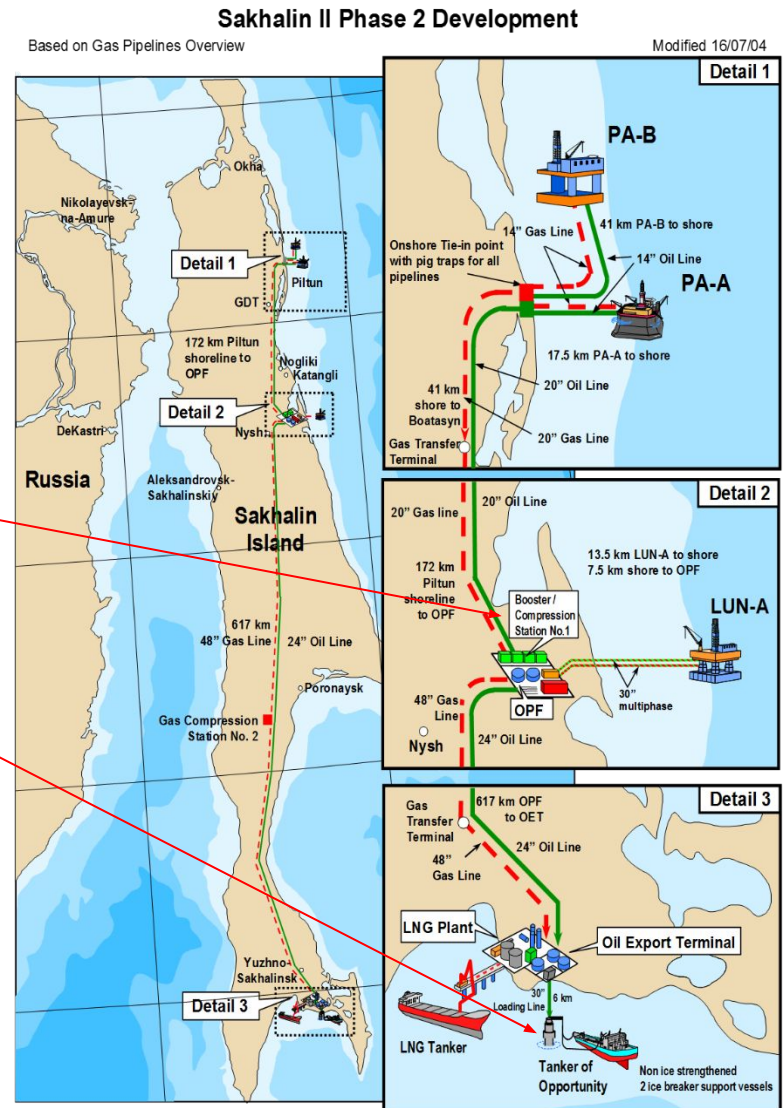
General Drawings :- 1~4

Smart Drawings :- 5~14

2.3 - SEIC - Assets & Locations

List of Asset locations for SEIC project

- 1.** 2000 (PA-A) - PA Field Platform A
- 2.** 3000 (PA-B) - PA Field Platform B
- 3.** 4000 (LUN-A) - Lunskeye Field Platform A
- 4.** 5000 Oil and Gas Pipelines
- 5.** 5200 Compressor & Booster Station 2
- 6.** 5500 (OET) - Oil Export Terminal
- 7.** 5510 (TLU) - Tanker Loading Unit
- 8.** 6000 (OPF) - Onshore Production Facility
- 9.** 7000 (LNG) - Liquefied Natural Gas Plant



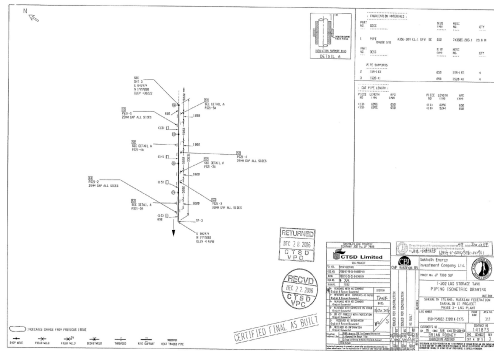
2.4 - SEIC – Drawing Classification



Primalux Technology Pte Ltd

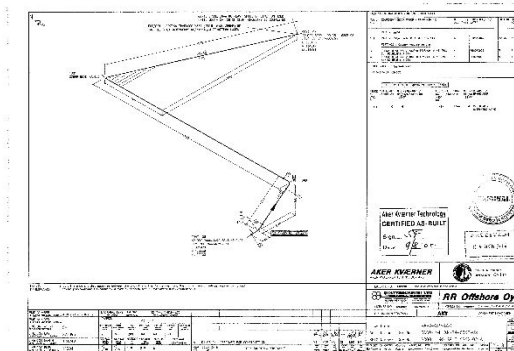
A) Isometric Drawing

(i) Simple



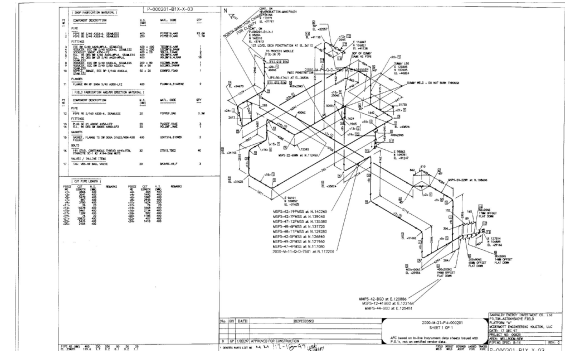
(Drawing with 1 to 4 pipelines and minimum information present on the drawing).

(ii) Medium



(Drawing with 5 to 8 pipelines and minimum information present on the drawing).

(iii) Complex

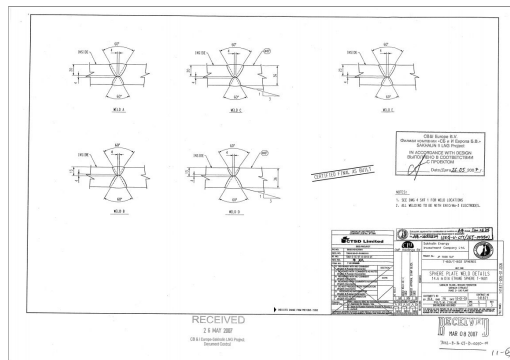


(Drawing with more than 8 pipelines and more information present on the drawing).

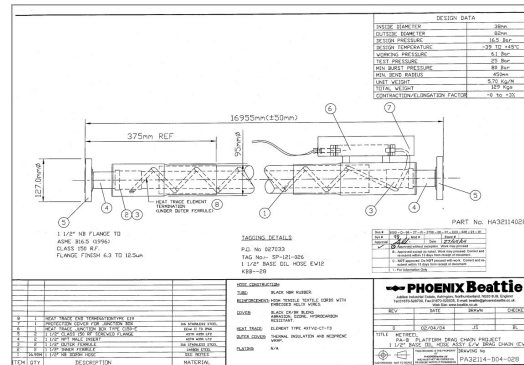
2.5 - SEIC – Drawing Classification

B) Vessel Drawing (GA Details Drawing)

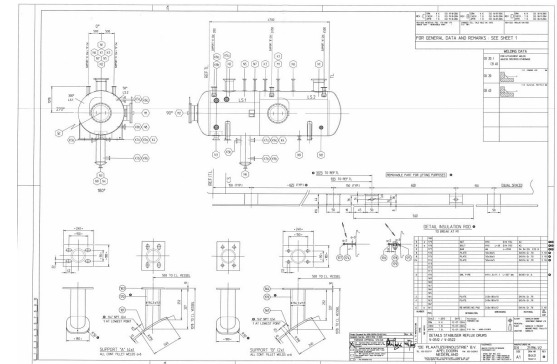
(i) Simple



(ii) Medium

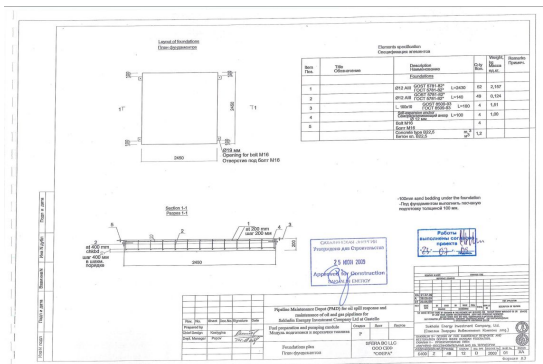


(iii) Complex

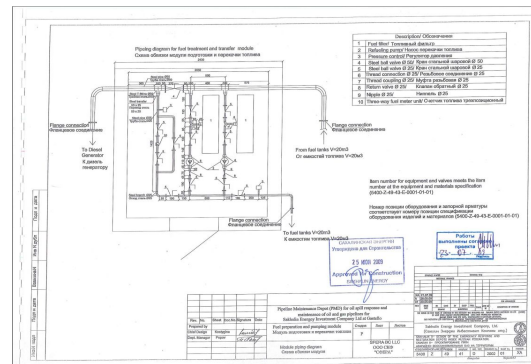


C) Plot Plan Drawing

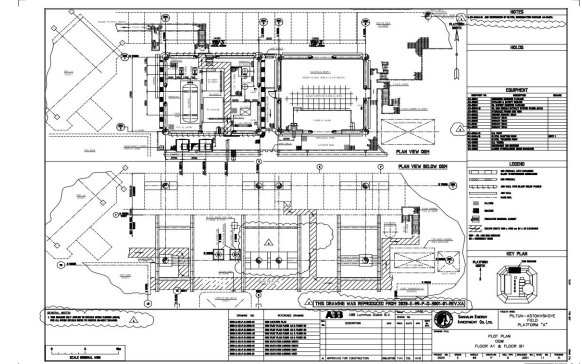
(i) Simple



(ii) Medium



(iii) Complex



2.6 - Smart Drawing

What is SMART Drawing?

- A SMART drawing is defined in CAD drawing, which will add some attributes for equipment such as tanks, vessels, columns, heat exchangers, valves and corrosion loops for inspection, by using Blocking and Grouping method.

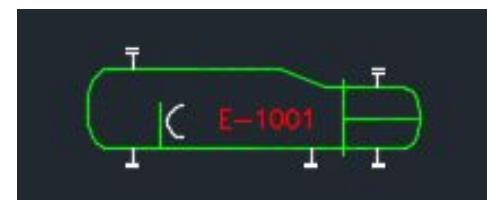
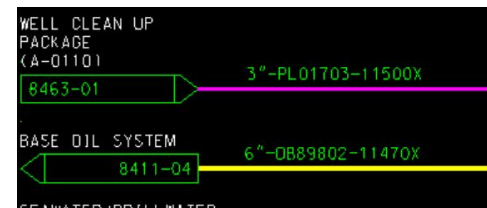
Blocking

- Relief valves
- Pressure safety valves



Grouping

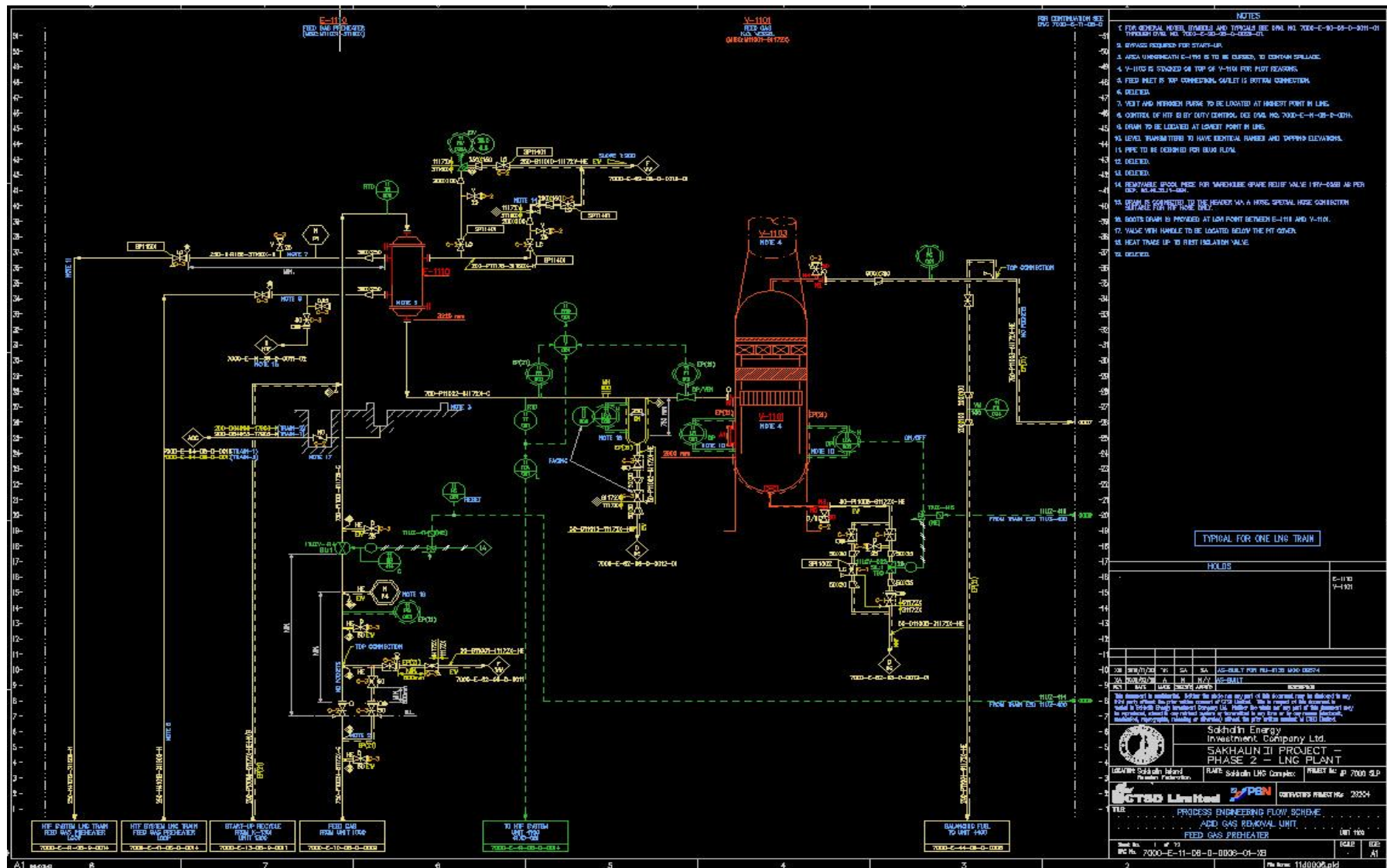
- Equipment (Tanks, Vessels, Columns, Heat Exchangers, Filters & major equipment with underline of Tag number X-XXX except Pump, Motor and Valve)
- Pipeline Identity Loops (PIL)
- Corrosion Loops (CL)



2.7 - Converted drawing – PDF ~ DWG



Primalux Technology Pte Ltd



2.8 - Working spaces of CIRRAS

Displaying a drawing in CIRRAS

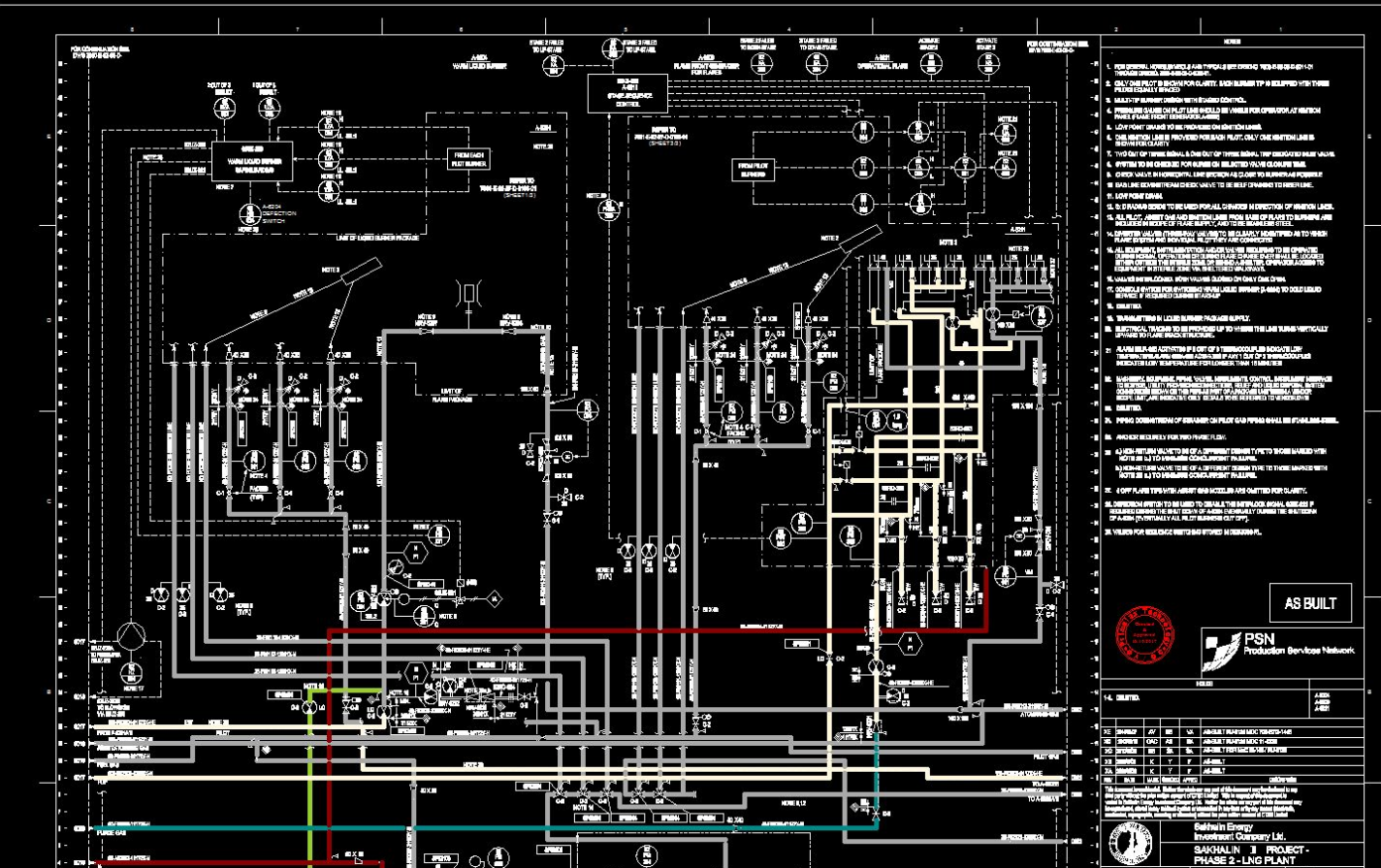
7000-E-62-08-D-0021-01-E_14114

☐ Drilldown
☒ Asset Detail

---Select KPI Color---

All Assets
Select Type: Corrosion Loop

- UHG-CL4401 [HP Fuel gas]
- UHG-CL4402 [LP Fuel gas]
- UHG-CL4702 [Instrument air (dry)]
- UHG-CL6201 [Warm flare]
- UHG-CL6202 [Cold Flare]



AS BUILT
PSN Production Service Network

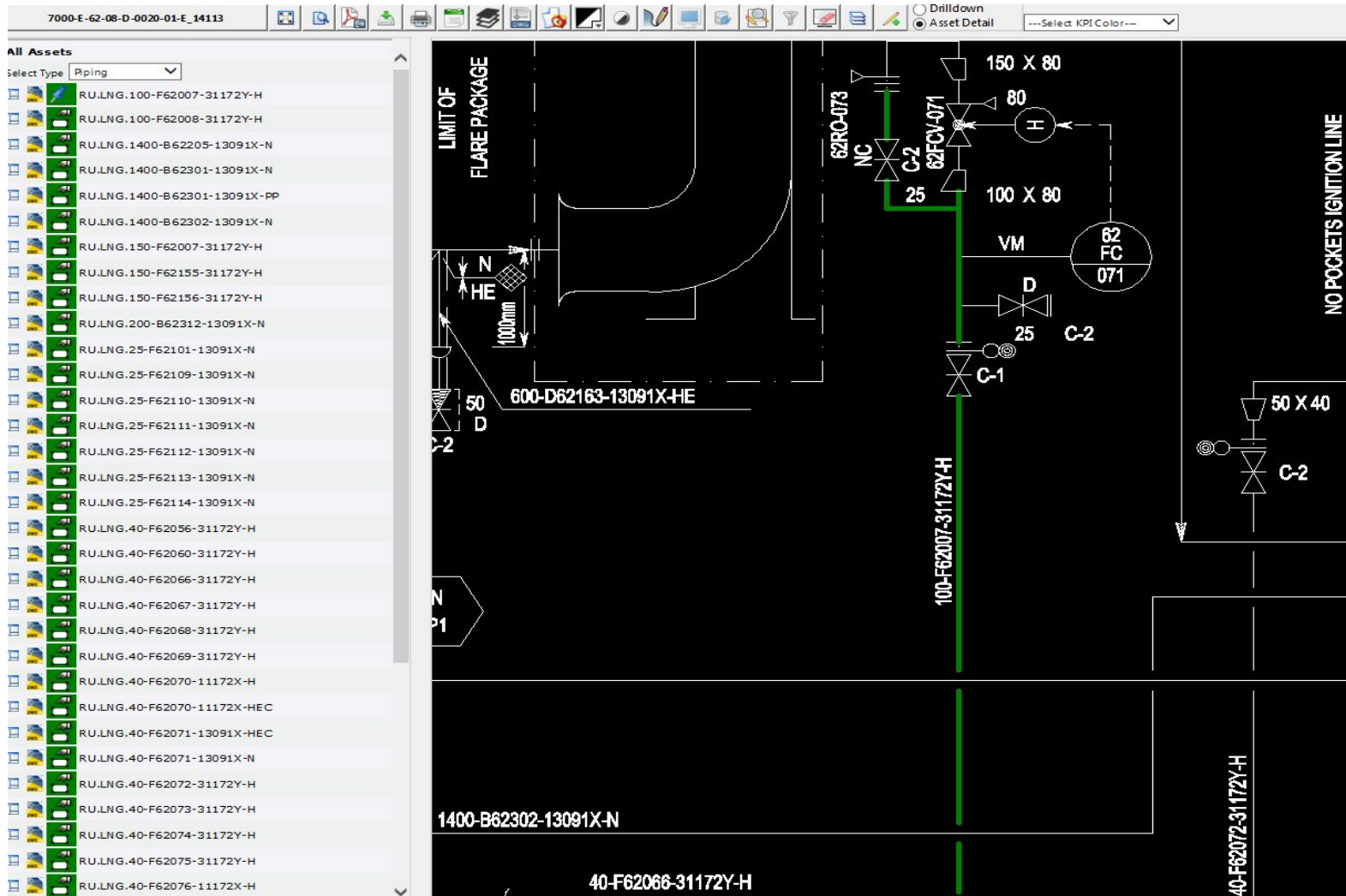
14. DATED:

NO.	DATE	BY	CHKD.	REVISION
01	01/01/2014	01	01	INITIAL DESIGN
02	01/01/2014	01	01	REVISION
03	01/01/2014	01	01	REVISION
04	01/01/2014	01	01	REVISION
05	01/01/2014	01	01	REVISION
06	01/01/2014	01	01	REVISION
07	01/01/2014	01	01	REVISION
08	01/01/2014	01	01	REVISION
09	01/01/2014	01	01	REVISION
10	01/01/2014	01	01	REVISION
11	01/01/2014	01	01	REVISION
12	01/01/2014	01	01	REVISION
13	01/01/2014	01	01	REVISION
14	01/01/2014	01	01	REVISION
15	01/01/2014	01	01	REVISION
16	01/01/2014	01	01	REVISION
17	01/01/2014	01	01	REVISION
18	01/01/2014	01	01	REVISION
19	01/01/2014	01	01	REVISION
20	01/01/2014	01	01	REVISION
21	01/01/2014	01	01	REVISION
22	01/01/2014	01	01	REVISION
23	01/01/2014	01	01	REVISION
24	01/01/2014	01	01	REVISION
25	01/01/2014	01	01	REVISION
26	01/01/2014	01	01	REVISION
27	01/01/2014	01	01	REVISION
28	01/01/2014	01	01	REVISION
29	01/01/2014	01	01	REVISION
30	01/01/2014	01	01	REVISION
31	01/01/2014	01	01	REVISION
32	01/01/2014	01	01	REVISION
33	01/01/2014	01	01	REVISION
34	01/01/2014	01	01	REVISION
35	01/01/2014	01	01	REVISION
36	01/01/2014	01	01	REVISION
37	01/01/2014	01	01	REVISION
38	01/01/2014	01	01	REVISION
39	01/01/2014	01	01	REVISION
40	01/01/2014	01	01	REVISION
41	01/01/2014	01	01	REVISION
42	01/01/2014	01	01	REVISION
43	01/01/2014	01	01	REVISION
44	01/01/2014	01	01	REVISION
45	01/01/2014	01	01	REVISION
46	01/01/2014	01	01	REVISION
47	01/01/2014	01	01	REVISION
48	01/01/2014	01	01	REVISION
49	01/01/2014	01	01	REVISION
50	01/01/2014	01	01	REVISION
51	01/01/2014	01	01	REVISION
52	01/01/2014	01	01	REVISION
53	01/01/2014	01	01	REVISION
54	01/01/2014	01	01	REVISION
55	01/01/2014	01	01	REVISION
56	01/01/2014	01	01	REVISION
57	01/01/2014	01	01	REVISION
58	01/01/2014	01	01	REVISION
59	01/01/2014	01	01	REVISION
60	01/01/2014	01	01	REVISION
61	01/01/2014	01	01	REVISION
62	01/01/2014	01	01	REVISION
63	01/01/2014	01	01	REVISION
64	01/01/2014	01	01	REVISION
65	01/01/2014	01	01	REVISION
66	01/01/2014	01	01	REVISION
67	01/01/2014	01	01	REVISION
68	01/01/2014	01	01	REVISION
69	01/01/2014	01	01	REVISION
70	01/01/2014	01	01	REVISION
71	01/01/2014	01	01	REVISION
72	01/01/2014	01	01	REVISION
73	01/01/2014	01	01	REVISION
74	01/01/2014	01	01	REVISION
75	01/01/2014	01	01	REVISION
76	01/01/2014	01	01	REVISION
77	01/01/2014	01	01	REVISION
78	01/01/2014	01	01	REVISION
79	01/01/2014	01	01	REVISION
80	01/01/2014	01	01	REVISION
81	01/01/2014	01	01	REVISION
82	01/01/2014	01	01	REVISION
83	01/01/2014	01	01	REVISION
84	01/01/2014	01	01	REVISION
85	01/01/2014	01	01	REVISION
86	01/01/2014	01	01	REVISION
87	01/01/2014	01	01	REVISION
88	01/01/2014	01	01	REVISION
89	01/01/2014	01	01	REVISION
90	01/01/2014	01	01	REVISION
91	01/01/2014	01	01	REVISION
92	01/01/2014	01	01	REVISION
93	01/01/2014	01	01	REVISION
94	01/01/2014	01	01	REVISION
95	01/01/2014	01	01	REVISION
96	01/01/2014	01	01	REVISION
97	01/01/2014	01	01	REVISION
98	01/01/2014	01	01	REVISION
99	01/01/2014	01	01	REVISION
100	01/01/2014	01	01	REVISION

Safin Energy
Investment Company Ltd.
SAKHALIN-1 PROJECT
PHASE 2 - LNG PLANT



2.8 - Working spaces of CIRRAS

Selecting an interesting pipeline line, you can get all the necessary information about it



2.8 - Working spaces of CIRRAS

Information on the selected line of the 100-F62007-31172Y-H

 Welcome O.Kisil 

ASSETS

RU.LNG.100-F62007-31172Y-H

Parent (1)

Child (0)

Protection

Connects (0)

Class (1)

Corrosion Loop (0)

Form (1)

Readings

Link Documents (1)

Schedule (0)

Reports

Inspection Report (0)

Role (0)

Matrix (0)

Tag Key

RU.LNG.100-F62007-31172Y-H

Tag Desc

Pipe - Fuel - Common - U-6200

Updated By

INTERFACE

SAP_TAG_DATA [Technical Passport (page 1)]

ABC Indicator	B
Manufacturer	
Serial Number	
Maintenance Plant	RU06
Location	LNGUT
Planner Group	6UT
Main Work Center	PRIMECH
Parent Functional Loc	RU.LNG.PIPING_U-6200
SAP Catalog Profile	CP_STA504

2.7 – Quality control

All produced drawings undergo a multistage quality control system.

- Precheck
- L0 check
- L2 check
- L3 check

For each level of verification, its own procedure is developed - checklist. Each level of verification is performed by different specialists. This approach allows us to achieve a high level of quality products

L0 QA/QC Form	
1 Document Information Check:	Tooltips in EDMS
1.1 Document filename & revision	Check against EDMS document number & revision?
1.2 Document number in Title Block	Did you key-in the correct document number?
1.3 Document revision history	Did you follow the same revision history?
1.4 Document sheet number	Exa

2 Drawing Attributes Check:	Too
2.1 Title Block used from the template as same as source file	Exa
2.2 Symbol used from symbol library as same as source file	Exa
2.3 Words & sentences are key-in correctly	Did
2.4 Line weight & pipeline global width	Did
2.5 Line type & line scale	Did
2.6 Stamp used from library as same as source file	Exa
2.7 Setting display arc and circle	Did
2.8 External References	Did
2.9 Font style	Exa
2.10 Color & Layer	Exa
3 Drawing compatibility check list	Too
3.1 Autodesk Trueviewer 2015 Compatibility	Che

4 Smart Drawing Attributes Check:	Too
4.1 Block RV, PSV attribute and tag number	Blk
4.2 Major Equipment are Groups	Sele
4.3 Pipeline Identity Loop (PIL) Grouping	Sele
4.4 Corrosion Loop (CL) Grouping as per CL mark-up drawing	Sele
4.5 Attribute tag number entered correctly into an excel spreadsheet	Blk

L2/AL2 QA/QC Form

1 Document Information Check:	
1.1 Document filename & revision	
1.2 Document number in Title Block	
1.3 Document revision history	
1.4 Document sheet number	
2 Drawing Attributes Check:	
2.1 General note, legend, symbol & bill of material are clear readable.	<input type="checkbox"/>
2.2 Font/text/sentence are clear readable without overlap.	<input type="checkbox"/>
2.3 Specification, pressure rating, insulation type, thickness and gasket rating are clear	<input type="checkbox"/>
2.4 Equipment/instrument's tag number are clear readable.	<input type="checkbox"/>
2.5 Centre line elevation for horizontal vessel, pump, nozzle are clear readable.	<input type="checkbox"/>
2.6 Pipeline number, slope for launcher/receiver, vent and drain are clear readable.	<input type="checkbox"/>

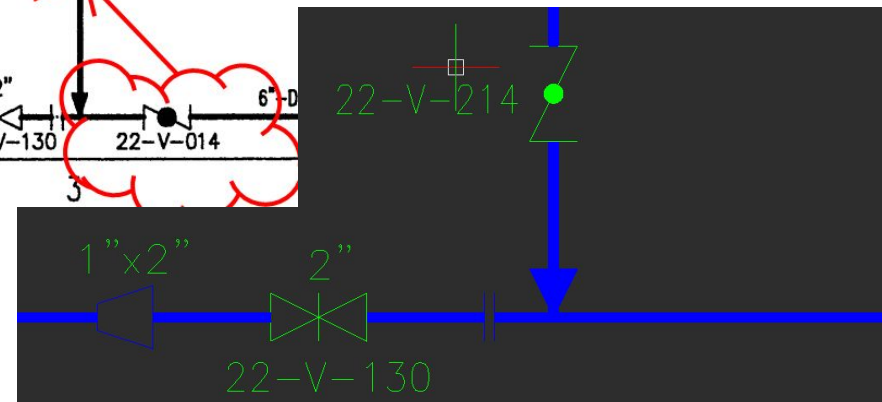
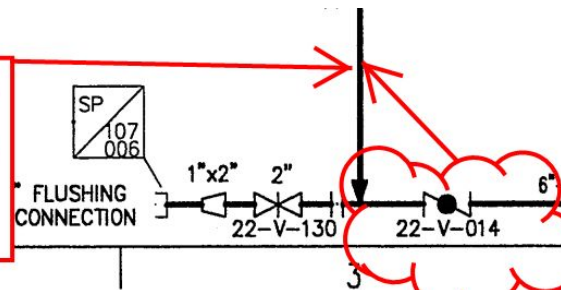
3. What we can do

Six specialists work in the office of the company in Yuzhno-Sakhalinsk. Our professional competence allows to work with drawings from different disciplines, such as:

GA Civil & Structural, GA Pipeline Schematic, GA Piping Drawings, Isometric Drawings, Pipeline Detail Drawings, Plot Plans Drawings, Process Engineering Flow Scheme (PEFS), Process Flow Scheme (PFS), Vessel Detail Drawings, Piping & Instrumentation Diagram (P&ID), and many others drawings.

We can convert, update, modify drawings. Create new drawings based on data and reports.

The position of valve 22-V-214 should be transferred to where the arrow is pointed



3. What we can do

Our team carried out the DWT project. Several templates of drawings were created for subsequent use by Sakhalin Energy contractors.

The results of the work on this project will lead to a uniform standard for drawing up drawings from various contractors of SEIC.

Among them are templates for: Plot Plans; Isometric drawings; PEFS/P&ID.

These templates contain a predefined set of layers and attributes coordinated with the customer

ATT_HID	11	Continuous	✓	✗	✗	0.25 mm
ATT_VIS	yellow	Continuous	✓	✗	✗	0.25 mm
B_BORDER	mag...	Continuous	✓	✗	✗	0.15 mm
B_CUTLINE	white	PHANTOM	✓	✗	✗	0.15 mm
B_LOGO	white	Continuous	✓	✗	✗	0.15 mm
B_REV	white	Continuous	✓	✗	✗	0.15 mm
B_TITLE	white	Continuous	✓	✗	✗	0.15 mm
B_TITLE_TXT_AT	white	Continuous	✓	✗	✗	0.15 mm
B_TITLE_TXT_ENG	white	Continuous	✓	✗	✗	0.15 mm
B_TITLE_TXT_RU	white	Continuous	✓	✗	✗	0.15 mm
BATT_LIM	220	PHANTOM	✓	✗	✗	0.25 mm
Defpoints	white	Continuous	✓	✗	✗	По умолчанию
ELEC	cyan	HIDDEN2	✓	✗	✗	0.25 mm
EQUIP	green	Continuous	✓	✗	✗	0.35 mm
EQUIP_INT	74	HIDDEN2	✓	✗	✗	0.25 mm
G_BKGRD	144	Continuous	✓	✗	✗	0.05 mm
G_BKGRDXT	145	Continuous	✓	✗	✗	0.13 mm
G_DIMN	132	Continuous	✓	✗	✗	0.15 mm
G_EXIST	145	Continuous	✓	✗	✗	0.05 mm
G_GRAPH	132	Continuous	✓	✗	✗	0.20 mm
G_GRID	44	Continuous	✓	✗	✗	0.05 mm
G_GRIDTXT	45	Continuous	✓	✗	✗	0.13 mm
G_HATCH	253	Continuous	✓	✗	✗	0.05 mm
G_HIDDEN	150	HIDDEN	✓	✗	✗	0.13 mm
G_MATCH	51	PHANTOM2	✓	✗	✗	0.40 mm
G_MATCHTXT	50	PHANTOM	✓	✗	✗	0.20 mm
G_PHANT	150	PHANTOM	✓	✗	✗	0.13 mm
G_PIPELINE	255	Continuous	✓	✗	✗	0.20 mm
G_REV	240	Continuous	✓	✗	✗	0.20 mm
G_SCOPECLOUD	blue	DASHED	✓	✗	✗	0.20 mm
G_SYMBOL	50	Continuous	✓	✗	✗	0.20 mm
G_TEXT_E	50	Continuous	✓	✗	✗	0.20 mm
G_TEXT_R	240	Continuous	✓	✗	✗	0.20 mm
G_VPORT	144	Continuous	✓	✗	✗	0.05 mm
GUIDE	9	Continuous	✓	✗	✗	По умолчанию
INST	cyan	Continuous	✓	✗	✗	0.25 mm
MDO_ITEMS	white	Continuous	✓	✗	✗	0.25 mm
MISC	white	Continuous	✓	✗	✗	0.25 mm
PIPE_INLINE	yellow	Continuous	✓	✗	✗	0.25 mm
PIPE_PRI	22	Continuous	✓	✗	✗	0.50 mm
PIPE_SEC	yellow	Continuous	✓	✗	✗	0.25 mm
PP_EQUIPMENT	80	Continuous	✓	✗	✗	0.20 mm

Атрибуты	
DRAWING_NUMBER	XXXX-Y-XX-XX-Y-XXXX-YY
SHEET	0 of 0
REV.	XX
CONTRACT_NO	0000
PROJECT_NO	XXX-XXX-XXX
TITLE_NAME_1	TITLE_NAME_1
TITLE_NAME_2	TITLE_NAME_2
TITLE_NAME_3	TITLE_NAME_3
TITLE_NAME_4	TITLE_NAME_4
TITLE_NAME_5	TITLE_NAME_5
TITLE_NAME_6	TITLE_NAME_6
REV1	
REV2	
REV3	
REV4	
REV5	

